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Orthodontics

PRESIDENT'S ADDRESS

AMERICAN ASSOCIATION OF ORTHODONTISTS

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I CERTAINLY appreciate the honor and privilege I have had as your president during the past year. I only regret I could not have had the same honor and privilege at a little later time in my life and that our dear and beloved Dr. Frank J. Delabarre, whose position I assumed, could not have enjoyed some of this honor he so richly deserved. The many years of untiring service and devotion given to the science of orthodontics by men such as Dr. Delabarre have been largely responsible for this Association's attaining its present high position in our specialized branch of dentistry. The achievements of the men who pioneered in the field of orthodontics and developed this Association into its present enviable position make one feel proud to be a member and to enjoy its many privileges. We cannot rest on these laurels, however, but must keep ourselves ever alert and ready to meet the many problems that are continually coming before us. The extreme changes in the economic picture that are now taking place are causing many changes in the practice of orthodontics and must be kept under surveillance at all times. These problems facing the practice of orthodontics should be considered by this Association, and I feel there never was a time when a unified organization was more necessary than at present. Where encroachments are made upon our professional standards, as well as those things that sustain them, a united front is essential if all interests of our specialty are to be protected.

Since we are a parent body made up of many sectional groups, any problem that may confront one of these groups is necessarily a problem of the whole Association. Difficulties encountered by the larger component societies will, in due time, affect those in the smaller localities. If orthodontics is to continue with its present high standard, the treatment of cases must be done by qualified men.

Thirty-Seventh Annual Session, Kansas City, Mo., April 17-20, 1939.

These economic changes, which I referred to have caused many men, who are unqualified to do so, to attempt to correct malformations of the dental arches, because of the fee involved and the fact that they have a license to perform any act included in the practice of dentistry. However, when medical men of known reputation make statements to laymen through the press that they would much prefer that a dentist attempt the removal of their children's tonsils than render orthodontic treatment without being adequately prepared, it is high time that we, as an organization, lend our support to improve our fellow practitioners' knowledge and ability, so that our specialty will not receive this unfavorable criticism. The most formidable methods of discouraging such practice are: first, to remove the tempting advertising of the orthodontic laboratories, which promise such simple treatment with their poorly designed appliances, after making what is usually an incorrect diagnosis. The majority of these advertisements have been eliminated or reworded, so as not to be misleading, by the splendid efforts of our former Socio-Economic Committee whose duties have been absorbed by the Public Relations Committee in the reorganization of our Association. There is still more work to be done as many laboratories are still flourishing by circularizing and by direct mail advertising. We should lend every support possible to this committee's efforts so that their splendid results may be continued. Second, we must educate the public on the value of high standards of skill in the practice of orthodontics. This is a most important step, and it is of infinite value. For the past year and a half, the New York Society of Orthodontists has been working on a plan that seems to be functioning very successfully in its locality. This plan was discussed at our council meeting last year, and action was taken to support the committee's work by the allocation of funds. To the officers and committeemen who have studied this problem during the past year, it is to be recommended that the American Association be the parent sponsor of this movement, so that it may become nationwide in its scope. This is such a vast undertaking that it cannot be done at once, but if gradual progress is made from time to time, we will soon have our Public Relation Committee, with its subcommittees, functioning throughout all sections of the country. I will not dwell further upon the project as our Public Relations Committee will give you a well integrated plan by Mr. Dwight Anderson, who is director for the public relations committee of the New York Medical Society and the New York Society of Orthodontists, and who has so kindly consented to present this to us. He is vitally interested in the problem and has certainly given a great deal of assistance to the New York group. Mr. Anderson will be on our program and will present this to us in a very comprehensive and effective manner. This subject is of such vital importance I hope everyone will be in attendance and that some action will be taken at this meeting.

I hesitate somewhat to mention the subject of orthodontic education as so much has been written and said about this matter in the past. Yet when so many young dental students, or rather dental graduates, ask the question where may they get orthodontic education they can afford, we still have to consider the problem.

While the short course orthodontic school has served a valuable place in orthodontic education in the past, I feel that to keep up with the additional

requirements and advance strides being made by all branches of medical and dental education, men wishing to specialize in orthodontics must look to the university postgraduate schools for the ultimate ideal in orthodontic education. When we stop and realize the advancement our branch of the profession has made since the formation of this Association, you can readily see why the university, with its abundant information on correlated subjects, is the more ideal place to secure this education. It is felt by many that our universities are making great progress but there is still room for improvement and that many existing evils should be corrected as quickly as possible if the universities are to take the place of the private schools and have orthodontic education keep pace with the present status of orthodontic practice. While the short term course is inadequate, oftentimes a long-time university course is impossible because of financial burdens placed upon the students over such a long period of time. A solution might be for the university course to be condensed somewhat so that a full year's work, as given today, might be given to a student in longer daily periods, say over a six-month period. Then the student should be required to return at regular intervals for a specified time to continue his clinic work and be checked upon by the instructor until he has completed the requirements. In this way, he will be able to carry on a practice in his own locality and yet be required to fulfill the requirements of a well-balanced orthodontic training course.

One of the greatest evils, as I see it, in orthodontic education is the fact that every student who takes a postgraduate course, whether of short or long-term duration, is allowed to graduate in orthodontics provided he can afford to take the course. Also, we know that some men will never make good orthodontists. The average Class A dental college requires a student to meet certain rigid requirements before a D.D.S. degree is conferred upon him. Why not make the requirements for receiving a certificate denoting postgraduate training in orthodontics just as rigid?

We have our state board, which requires a further examination before the eligibility to practice is established. At this point I strongly advocate extending our efforts to have specialist legislation, such as that passed in Oklahoma and Tennessee some time ago, enacted whenever possible. If we are to prevent the unfortunate results being obtained by some of the men, who are unprepared, practicing orthodontics, we must have some type of legislation or examination, before they are allowed to qualify themselves before the public as specialists in our branch of the profession. A specialist is supposed to be one who has training and ability along a certain line. It would be of considerable benefit to both the public and the orthodontic profession if men who, when beginning the study of orthodontics, are found to be pursuing a specialty they are more or less unfitted for were discouraged at this time, rather than allowed to continue.

Preventive orthodontics, as is now being advocated in the public health education departments of many of the various states, is doing a great deal toward curtailing the increase in need for orthodontic services. On the other hand, with the educational advance, many people are becoming more orthodontics conscious, which fact greatly enhances the desire for orthodontic services. In

meeting this demand it would be far better that orthodontic treatment rendered by men without proper training were never attempted than it would be to have these services rendered, as some are today, the results of which so belittle the value of orthodontics among other professions.

The American Board of Orthodontics is proving a stimulant to our members, especially the younger generation. It has been functioning in a most satisfactory manner since its inception in 1929. Preparing for the Board creates a new interest and enthusiasm among our members and has aided the literature of orthodontics in a definitely helpful way.

Your president and secretary were called upon to meet in St. Louis at the American Dental Meeting, with representatives from each branch of dentistry. We were questioned about the activities of the American Board and were informed the American Dental Association is planning to organize a board that will certify members in all the other specialties of our profession. Being as well satisfied as we are with the American Board, we only listened, but we promised representation at the next meeting to be held in Milwaukee next July. We felt the good work of the American Board should not be left to a general board, functioning in all specialties, until such board has proved itself fully capable of handling our requirements, and even then this may not be the wise course to pursue.

Our JOURNAL is still continuing along the same high standards and giving the American Association of Orthodontists splendid cooperation. During the past year you have probably noted that there has been a change in the membership of the editorial board, which was made at the suggestion of the members of our Association.

It is about time we were giving a little more thought to the interpretation of our code of ethics. With all the temptation being offered practitioners today, because of our economic situation, we sometimes underestimate the valued principles behind our code of ethics. We, as orthodontists, who are continually striving for higher standards of treatment and professional conduct, should hold ourselves as fine examples of the proper handling of this very important problem and not lend ourselves to any thoughtless support of unethical practices. Much harm has been done in the past, I believe, by carelessness rather than a direct attempt to defeat the principles of our code of ethics. Nevertheless, harm has been done, and it would be most helpful if our judicial council prepare, from time to time, gentle reminders of the things that should be avoided in our everyday professional activities and have copies presented to our membership. Now is the time for us to prove the importance of that trusting and confidential relationship between the patient and doctor which has been one of the traditions of our profession for these many years. The trend toward socialized medicine and health insurance tends to break this down, and we must double our efforts to maintain and, if possible, improve our present standing.

The reorganization plan is still being carried on and progress is being made. In bringing together our component societies we have an increase of eighty-two members, which brings us very close to the 600 mark. The central section has

been organized, but I believe there has not been a scientific sectional meeting held yet. Their membership is paid up 100 per cent, as is the membership in each one of our component societies.

I want to thank the secretaries of each sectional society for their efficient work and gratifying results they obtained under the direct prodding of our most efficient secretary and treasurer. For the past three years we have had an enviable record of no delinquencies in our Association at the time of our annual meeting.

With the continuing of the reorganization, it is essential we adopt a definite policy regarding the requirements for membership in our Association. In the past there have been conflicting requirements for membership in some of the component sectional societies. The American Society of Orthodontists had several members join the society many years ago, before we required our members to be in the exclusive practice of orthodontics. These men, we all feel, should not be asked to resign, or be forced into exclusive practice at this time. However, it is only fair that since the American Association requires exclusive practice, no new member should come in through the component societies who does not meet all requirements. It has been brought to my attention there are several men in our component societies who are not in exclusive practice. It is felt that we must make a definite decision and insist that every new member be able to meet our uniform requirements and that the component societies should change their by-laws to make them conform to those of the parent body.

Since we all realize the value of the work being done by the Public Relations Committee, I think we have been overlooking an opportunity to help this problem in not having a well-trained, paid publicity agent, or agency, working for us during our meetings. Since the evils are most prevalent in the larger cities, and our meetings are usually held in such centers, it is of great importance that we get as much publicity in our newspapers regarding our meetings as is possible. These agencies have methods, developed recently, to place publicity on a more extensive national scale at the time of our meetings. Since the enactment of so many stringent antiadvertising dental laws, which take away such a large amount of revenue from our newspapers, we cannot expect them to be overly anxious to give us any great amount of publicity. However, if we hire an efficient publicity agency, it will have ways of getting this information before the public in the form we desire. It is time this society should include an appropriation in our budget to take care of this work, so that a competent agency, national in its scope, may handle this from year to year, thereby increasing their efficiency and ability to know and present our problems. We use the same reporting agency from year to year and find they are better able to handle successfully our reporting because of their experience with our problems. In the past, the chairmen of the publicity committee of our organization certainly have had a thankless job, with nothing but criticism as their reward. It would seem the least we can do is to offer them competent assistance, if they take the time and energy to edit this material.

A precedent, which was suggested by our president last year and followed by me this year, should be explained at this time. With a curtailed budget due to our paying for our publication out of our annual dues, which have not been

increased, we have to arrange our meetings on as economical a scale as is possible. Inasmuch as such a small percentage of our members bring their wives to the meetings, it was felt hardly fair that the other members be required to pay for the entertainment of this small group. Consequently, we are trying the experiment this year, of making a small charge for the wives who do attend. We hope this will be taken in the spirit in which it is meant and will, in no way, interfere with the attendance of the wives at our meetings.

The most important objective in our constitution and by-laws is "to promote among our members a fraternal relationship." From the standpoint of the welfare of our organization, nothing has redounded more to the steady advancement of orthodontics, than the spirit of friendship and cooperation, which results from our members' getting together each year. Not only is the evidence of this benefit manifest on a national basis, but also in local communities where it has obliterated jealousies and misunderstandings which, otherwise, would have stood as inhibiting influences. We are hopeful that this spirit of cooperation will continue to grow and that, if jealousies do exist, they will always be manifest through the efforts of all to promote the good name of our specialty.

In closing, I would like to take this opportunity to thank the officers and the members of my various committees, the essayists and clinicians, who have worked so hard during the year and in the preparation of this meeting. The reports you will hear, I feel sure, will show you that our standing committees have worked hard to gather and present to you the information as they found it. The Program Committee has tried to keep its presentations on as sound and practical basis as possible, so that if all sessions are attended diligently you will go home better prepared to give that fine degree of service expected of a well-trained orthodontist. The Committee on Local Arrangements has spent a great deal of time seeing that every detail to facilitate the smooth functioning of this meeting has been taken care of to the satisfaction and pleasure of all. If this meeting is successful and you leave Kansas City feeling you have gained knowledge and a better understanding of your problems and of your fellow men, the credit is due entirely to these men, and not to me.

MAKING THE TRUTH CREDIBLE

DWIGHT ANDERSON,* NEW YORK, N. Y.

IT IS my purpose to pose several questions, and try to answer them.

What is the truth about orthodontics which is either misunderstood or distorted? Why is this truth not accepted immediately? If educational efforts are needed, to whom should they be directed? How—by what methods or tools of interpretation—can the truth be made credible?

A child's face lasts his entire life. Whoever attempts to change its outline leaves upon it an indelible trade-mark. It is a matter of public interest, as well as professional interest, that those who hold themselves out to practice orthodontics should be skilled by adequate training and experience, and be so accredited by the opinion of others than themselves. In essence, the truth about orthodontics is this: The practice is a specialty and should be characterized by as high a code of professional ethics as any other of the specialties in health services. It should be as free from the dominance of commercialism and the profit motive, as it is possible for human relationships to be conducted.

What do we find as we look upon the orthodontic scene today? We find a deliberate and commercialized effort to persuade the general practitioner that he can, without special training, do orthodontic work. A year or two ago there appeared in a national monthly dental journal an article entitled, "Orthodontics Is Easy." It was undoubtedly easy for the author. Recently, in fact no later than March 3 of this year, a publication claiming to be "The Weekly Newspaper of the Dental Profession," published an article by a general practitioner. At the outset of his article the writer stated his motive in writing it. I quote:

> While the intellects of the world are offering pros and cons of causes and their solution we, as dentists, are more vitally concerned in what can be done in our own community RIGHT NOW to reestablish a creditable bank balance, instead of gazing woefully on our perilous state of cash insolvency that has fairly sneered at us in the many months gone by.
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> Undoubtedly I shall be criticized with mercenary motives with some when I make this statement: Hundreds of dentists who need the money, who find difficulty in meeting ordinary expenses, who even bemoan the fact that they are dentists and not plumbers at one dollar and thirty cents an hour are literally throwing away hundreds of dollars yearly by not including orthodontia in their practices. There is no field in dentistry more vital to the welfare of the future generation and there is no field more fascinating or more remunerating than the correction of malformed teeth, and yet hundreds of dentists who are bemoaning their financial condition are blind to the situation.

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Read before the Annual Meeting of the American Association of Orthodontists, Kansas City, Mo., April, 1939.

Thus having oriented himself to the subject matter, so to speak, and shown where his chief interest lies, we have no difficulty in understanding fully that he looks upon orthodontics as a road to "easy money." No special training or experience is required. He goes on to explain exactly how to proceed.

> We rely upon our efficient commercial laboratories to construct all of our prosthetic needs. In a like degree of skill the laboratory who, at my beginning and still does construct all my appliances, has a department of orthodontic appliances presided over by a graduate dentist who is skilled to the n'th degree in all phases of the work. A dentist can wisely select a case of no great complexity, submit the problem to the doctor in charge of the laboratory and he will be guided throughout the duration of the correction with results, that, I can assure you, will be satisfactory to all parties concerned. Then after the initial attempt at orthodontia, study the works on the subject and allow nothing but constant progress to cross your path.

But suppose something goes wrong? Well, of course, one has to learn, and it is a fine thing if you can learn and be paid for it at the same time! The writer evidently knew he had made a number of mistakes, but that part of it was all right and to be expected, for he goes on to justify gaining experience in this way.

> If you have patience, a desire to learn and a love for children you can regulate teeth successfully just as well as I or any one else did when first we gave orthodontia attention. Surgeons do not hesitate to wield the knife before they become specialists neither was their first case as efficiently performed as after years of experience. One cannot run before he walks. Logically the correction of teeth offers no more complexity nor is fraught with more danger of failure than a surgical operation. Let me assure you there are no deep dark secrets about orthodontia and the corrective measures required to bring about normalcy to the mouth of disfiguring teeth that some attempt to reserve for the few.

I leave you to judge how much real love of children can be cherished by those who would thus wilfully experiment upon them. It reminds one of the correspondence schools, once so popular, which advertised to the public: "Earn while you learn!"

The writer distorts the facts about the surgeon. It may be true that every doctor's medical license entitles him to perform any operation he wishes, if he can find a hospital that will let him, but the medical profession sees to it that he is not permitted to do so. If the writer of the article from which I have quoted had taken pains to inquire, he would have learned that no surgeon is allowed to operate in a hospital worthy of the name until he has served a long period of internship in surgery, often lasting several years, devoted exclusively to this subject under continuous direct supervision of competent men. Hospitals approved by the American Medical Association and the American College of Surgeons do not permit surgeons to operate in them unless they are known to the staff to be able to perform the particular procedure they are attempting. This regulation has been accomplished by the voluntary effort of the specialists concerned who have disciplined their own colleagues. It has been done for the pub-

lic good, regardless of financial advantage, and the same thing must be done by the orthodontists in their own field if they are to survive as specialists.

The weekly newspaper from which I have quoted is conducting an enterprising circulation campaign among dentists in all parts of the United States. Now, it may be true that the commercialism which is active in the profession in the great cities has not yet spread to the smaller towns of the nation, and the situation may seem not to be a matter of grave concern to many of the members of the American Association of Orthodontists, because they do not have to deal with it in their own practice. But how long will it be before this malignancy spreads everywhere? That which is profitable in a metropolis will soon be made to be profitable in towns of 6000 population throughout the country, which is the size of the town in which the dentist lives who wrote the article from which quotation has been made.

Now the effort to distort and misrepresent the truth that orthodontics is a specialty has gone even farther than these sporadic claims of individuals. It has gone even farther than the blandishments of the commercial laboratory, persuading the untrained dentist that he can give good service when they, not he, assume to diagnose and treat an orthodontic case. They have gone so far, as you already know, as to result in the formation of an organization to promote this sort of thinking on a grand scale. A society formed for this purpose has advertised that it is "the only body of its kind existing in organized dentistry today, whose doors are open to the general practitioner interested in orthodontics."

Why is not the truth about orthodontics accepted immediately, without deliberate efforts to make it clear? Why should it be necessary, as some of you believe it is necessary, for the American Association of Orthodontists to undertake an active educational program? One would think that the fact that orthodontics is recognized as a specialty by 13 universities which offer postgraduate courses in the subject, would be enough to establish the truth as self-evident, without your organization raising its voice in its own behalf.

Other professional groups are meeting a similar problem by taking such action as has been recommended to you. Unmistakable evidence is before us that groups representing institutions of higher learning have come to recognize within the last few years the need to protect their standards from erosion or corruption by using the techniques of popular publicity. I need only point to the existence of an organization named the "American College Publicity Association," of which you have doubtless never heard. Its membership includes more than 250 persons actively engaged in interpreting educational institutions to the public. Every great university has a staff devoted to this work. The organization issues a monthly publication and holds regional, as well as national, meetings. At a regional meeting held at Troy, N. Y., April 1, 1939, Dr. Dixon Ryan Fox, President of Union College, Schenectady, N. Y., said:

> If a college is ashamed of what it is doing or if it is so self-sufficient that it is indifferent to public opinion, naturally it will avoid the cost and trouble of maintaining an office of public announcements. If it believes that it is justifying its existence, if it thinks of the public as its creditor,

> entitled to know how the human and material treasure which has been put in its hands is being used, then such an office is not only appropriate but is an obligation and a practical necessity.
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> The office of public announcement is therefore no casual, part-time affair to be handed over to some outside agency or to some young fellow "trying to get along." It needs to beat in the same rhythm as the college, able to sense the general purpose of the institution, able to detect the relation of each achievement to that purpose—in other words, to recognize what in the college life and work is really significant.

At this meeting there was held a "President's Panel," at which several college and university presidents discussed questions of publicity methods with the delegates.

If we turn to Government, we see an increasing use of publicity by departments at Washington, especially within the last few years. There are more than 250 whole or part-time government publicity agents, according to a report of the Brookings Institute, and on Oct. 1, 1936, these persons were drawing annual salaries totaling $900,000. These figures apply only to Washington. The publicity costs of the W.P.A. are known only to Harry Hopkins and to God, but it is estimated that this agency and others operating throughout the country bring the total personnel to 525 and its salary cost to $1,900,000.

Organized medicine has been one of the last to recognize the need. At a meeting of the Medical Society of the State of New York some thirty-five years ago, Grover Cleveland, then ex-president of the United States and professor of law at Princeton University, made a plea to the medical profession. He said as the keynote of his address: "Tear off this veil of mystery. Take the public into your confidence." Yet it was not until 1935 that the society set up a bureau of public relations actively to interpret the medical viewpoint to the people of the state. This pioneer effort has been followed in a number of other states, where need has been felt for work of this sort to supplement the efforts of the American Medical Association.

Said Dr. Floyd S. Winslow, president of the Medical Society of the State of New York in 1937: "The time has come when no cause can prevail, no benefits be conferred on society by philanthropy, without the coincident use of the tools of deliberate popular persuasion. The expert, be he doctor, lawyer, or philanthropist, who ignores this fact, is doomed."

In passing from this subject, it is desirable to spend a moment considering the reason why these measures are necessary today, although only a few years ago, they were not accepted as a part of ethical professional behavior. I can do no better than quote as to this point, Dr. Howard W. Haggard, of Yale University, in a talk which he made before the New York County Medical Society:

> The social worker of today knows that the greatest, indeed probably the only, possible field of social betterment is offered by medical application. Some aggressive lay groups stand ready to raid the medical field for its unapplied potentialities. With the natural reaction of newcomers to the field—unacquainted with its ramifications, but sensing its deficiencies—they assume that there is something basically wrong with the form of medical

> practice. Their first inclination is to remake the form of medicine. Today the doctor must take his choice, lead or be led.
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> There is tremendous danger from this direction. Public opinion determines the condition and future of medicine. Today the public has an influence on social affairs and upon medical affairs greater than at any other time in history. But the actions of the public, unless guided, are always destructive, never constructive. People tend to pull down everything to the average level. Advancement, construction, is not made by great numbers, but by great individuals.
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> The only chance for medical leadership from the physician is to cultivate throughout our public a realization of what medicine can do; and to cultivate a cooperation between the public and the physician as its prophet. Unfortunately, too much of the shaping has been to divert attention to the marvels of medical science and the deficiencies of medical practice.

This change in attitude of the professional groups may have been necessitated by the mass movement, seemingly world-wide, which has been called "The Revolt of the Masses," in the book of that title by the Spanish philosopher, Ortega y Gasset. This author describes the assumption of complete social power by the masses.

"We see the multitude," he says, "as such, in possession of the places and the instruments created by civilization . . . precisely in the best places, the relatively refined creation of human culture, previously reserved for lesser groups, in a word to minorities. . . . The mass is the assemblage of persons not specially qualified. The mass is all that which sets no value on itself—good or ill—based on specific grounds, but which feels itself 'just like everybody,' and nevertheless is not concerned about it; is, in fact, quite happy to feel itself as one with everybody else. . . . There is no doubt that the most radical division possible to make of society is that which splits itself into two classes of creatures: Those who make great demands on themselves, piling up difficulties and duties; and those who demand nothing special of themselves, but for whom to live is to be every moment what they already are, without imposing on themselves any effort toward perfection; mere buoys that float on the waves. . . . Previously special activities were exercised by qualified minorities, or at least by those who claimed such qualification. The mass asserted no right to intervene in them; they realized that if they wished to intervene they would necessarily have to acquire those special qualities and cease being mere mass. They recognized their place in a healthy dynamic social system. . . . The mass has decided to advance to the foreground of social life, to occupy the places, to use the instruments and to enjoy the pleasures hitherto reserved to the few. . . . *The characteristic of the hour is that the commonplace mind, knowing itself to be commonplace, has the assurance to proclaim the rights of the commonplace and to impose them wherever it will. . . . The mass crushes beneath it everything that is different, everything that is excellent, individual, qualified and select.*"

These are the social factors which we must take into account. They go deeper into the fabric of civilization than any superficial commercialism which, after all, is but a symptom of the disorder. It becomes clear, from an exam-

ination of these trends, why mass persuasion has been accepted as a defense by universities, medical societies, and other groups possessing training and skill.

The situation resolves itself into this: if the competent groups are to survive the changes taking place about us, they must justify their competence to the incompetent.

Perhaps there is a basic flaw in our educational system itself. Either the process of popular education has gone too far, or it has not gone far enough. Ask a passer-by why men are out of work, and he will have a ready answer; ask another whether pump-priming will produce lasting prosperity, and he will tell you; ask a soda-water clerk what is good for a cold, and he will know. The average person decides these and many other questions by the application of some familiar formula. He does not distinguish judgments which are matters of knowledge from those which are matters of opinion, or just guesswork.

The question arises, Has popular education fulfilled its dual purpose to teach people what they should know, and further, to teach them how extensive is the body of knowledge of which they are ignorant? The beginning of wisdom is to know the limitations of our knowledge and the extent of our ignorance. It is necessary to have this knowledge of our own ignorance, so to speak, if we are to select for our guidance real and not fraudulent experts, and if we are to recognize their capacities and attach true values to their opinions. Here lies a real threat to our democratic institutions.

Such are the forces arrayed against the professional groups. They seem formidable. Is the task too great to undertake with prospects for success? Let us examine this phase of the matter, for it is important.

At first blush, it would seem hopeless to try to educate 130 million people. But this is not necessary. We need to reach only *key* people. Congressmen know this. A former member of Congress, Samuel B. Pettengill, states that of every 100 people, 35 are children or aliens and not entitled to vote. That leaves 65. Of these 65, about 60 per cent vote, which means that 38 out of every 100 people vote. Assuming that they are about evenly divided between the two great parties, the matter of a Congressman being re-elected may easily resolve itself into convincing only eight or ten persons out of every hundred. This is a job that can be done, and Congressmen do it, or they would not remain in Congress.

A plan for education such as we are considering cannot be put into effect with broadsides from a shotgun fired into the crowd. We must select as targets key people, to whom the truth about orthodontics should be addressed; key people in the medical and dental field, in the public health field, in the school field. They are a small minority. Each member of these groups influences, in turn, hundreds of others who appeal to them for advice and suggestions. We enumerate twenty-one such groups in the outline plan for public relations which is presented to you at this meeting. Doubtless most of us have had the experience of mentioning the term "orthodontics" to educated persons and been met with a look of blank amazement. Many leading citizens do not know what the word means, to say nothing of appreciating the qualifications of the competent practitioner.

I now come to the last question which I shall try to answer. How—by what means or tools of interpretation—can the truth about orthodontics be made credible?

The answer is, by the printed word, and by radio. The first method already has been used by the New York Society of Orthodontists. Two documents were issued and widely circulated among dentists, pediatricians, dental hygienists, and other key groups. This work was experimental, conducted as a demonstration of a project too broad in its fundamentals to be continued by a sectional organization. It is believed that so far as it went the effort was effectual. It is brought to you now for consideration on a national scale.

Printed matter possesses many advantages over radio. It has permanence; a leaflet or a pamphlet may be read at any time and filed away for reference. It goes to the specific person you wish to receive it; you know he gets it, but, of course, you do not know whether he reads it or not. A folder of four pages—"What Is Orthodontics?"—might be effectual if written in short, terse sentences, to be read at a glance. It could go to thousands comprising the twenty-one groups enumerated in the suggested outline of a plan. To those who respond requesting further information might be sent a pamphlet containing further information.

As time goes on, there will result from this work a great deal of correspondence, and we shall ultimately obtain a list of especially interested persons who should be continuously cultivated to wield their influence in behalf of our standards. To this list may be sent, when its size grows large enough, timely bulletins telling them of specific things they can do in their own fields. I regard this as a particularly valuable phase of the work and wish to emphasize it strongly. Its value will depend on the lists which are used. Building a list for a particular purpose is a long process, but it can be, in the end, a capital investment that will bring manifold returns in good will and understanding.

One of the most important elements in a sound public relations plan is to gain the interested cooperation of those within the group itself. To this end, bulletins may be sent from time to time to the whole membership of the Society, or to sectional officers to assist them locally to take advantage of the facilities developed by the public relations committee.

So much for the use of printed matter, which is of paramount importance. But we must not overlook radio. The use of this vehicle may be postponed until it can be integrated with the direct mail technique, which offers less difficulties. But I wish to say that a public relations setup which does not include the use of radio, is incomplete. You should now be considering its future use, and I wish to present a few salient facts regarding this instrument of communication.

Mr. H. C. Boice of the Columbia Broadcasting System says:

> There are 7,000,000 more radios in the United States than there are automobiles; more than twice as many homes in the United States are equipped with radios as with telephones.
>
> Breaking down ownership by income levels, in urban homes with incomes of $5,000 and over, radio ownership is 98 per cent; in urban homes of $2,000 and under, it is 85 per cent.

> There are more than 560 commercial radio stations licensed and in operation. More than 260 are affiliated with coast-to-coast networks. Advertisers bought time on these networks in 1936 amounting to $59,671,244. On non-network advertising another impressive sum was spent, $47,879,642, to be exact.
>
> The use of radio is increasing. A survey made of the average length of time spent per day listening to the radio showed the following figures: 4.1 hours per day in 1932; 4.2 in 1933; 4.3 in 1934; 4.8 in 1935, and 5.1 in 1936.

While radio is highly commercialized, and utilized principally for purposes of mere entertainment, or highly emotional appeals, it is also available, often without any cost whatever, for the presentation of informative and educational material. It is rapidly making inroads on the printed form as a means of communication. Some light has been thrown on this tendency by studies made by Dr. Paul Rankin of Ohio State University. He has reported that the human organism uses the auditory mechanism earlier in life and more frequently through life than it does the visual. Adults, he found, spend 45 per cent of the total time devoted to communication in listening, 30 per cent in talking, 16 per cent in reading, 9 per cent in writing.

What of the ability of the average person to obtain from an educational radio presentation an adequate understanding of its content? On this point, too, we have knowledge, and not guesswork. In the psychologic laboratory of Harvard University, experiments were conducted over a period of eighteen months by Dr. Hadley Cantril and Dr. Gordon W. Allport. These were some of their findings:

> That straight facts are better understood and more interesting when heard over the radio than when read on a printed page.
>
> That narrative and abstract material, political talks and exposition are better understood and more interesting when heard over the radio.
>
> That after twenty-four hours, people recalled advertising trade names better when they had been heard over the radio than when read on a printed page.
>
> That numbers and simple words were remembered better when presented over the radio, but that difficult or unusual words were remembered better when presented visually.
>
> That sentences, short or long, simple or complex, were recalled better when heard over the radio.
>
> That people remember directions better, and understand them more readily, when they hear them than when they read them.
>
> That the human voice tends to make auditory presentations more personal, and that caution was exercised more toward the printed than toward the spoken material.
>
> That material presented over the radio has greater power of suggestion than material read on a printed page.

It has been my purpose to present here, a few of the salient aspects of a public relations policy for the profession of orthodontics. It is based on the truth of the work you are doing, and the making of that truth credible to the

public, by addressing it to special key groups, using vehicles of communication which will convey to them the information they should have, in a way they will be willing to accept it.

I am fully aware of the difficulties which confront you in the practice of a specialty which is still feeling its way toward the universal acceptance of its standards. I have lived during the last two years in close association with members of your society on the Atlantic Coast, and I have watched with keen interest, their struggles to perfect their skills, their enthusiasm to maintain and elevate their standards.

If you are to have ideals, you must pursue them with faith in their value and you must protect them with unflagging courage and zeal. Difficulties will be encountered; occasional failures may mark the path. But failure, when regarded as a lesson to be learned, is but a harbinger of success. It is a doctrine of futility to say, as some are saying, that standards should be relaxed because all do not measure up to them.

"A man's reach," said Robert Browning, "should exceed his grasp."

THE TREATMENT OF INCIPIENT CLASS III MALOCCLUSION

G. Vernon Fisk, D.D.S., Toronto, Can.

THE fact that aberrations of jaw growth and development are manifestations of complex biologic phenomena, which are at present only partially understood, constitutes a special challenge to the orthodontic clinician. In order to meet the problems involved in this challenge, the limitations of the specialized training of the orthodontist of today must be supplemented, as far as possible, from the fields of allied work. The various factors linked up with growth disharmonies of the jaws must be collated and properly evaluated before success in treatment can be expected.

In cases of incipient malocclusion there is great opportunity for integrated scientific investigation. During periods of observation preceding treatment, a compilation of data concerning causative factors is made possible. Wherever feasible, the observation period is strongly to be recommended in dealing with incipient malocclusion. This is equally true in Class III malocclusion.

As you are well aware, Class III malocclusion is defined by Angle[1] as "characterized by mesial occlusion in both lateral halves of the dental arches. The extent to which the mesial occlusion must exist in order to place the case in the occlusion of this class is slightly more than one-half the width of a single cusp on each side."

From a study of such cases two types may be recognized, (a) those which we shall call "typical," (b) those which we shall designate "atypical."

To be more specific, the typical Class III malocclusion exhibits an inherent overgrowth of the mandible, while the atypical type includes in some cases diminished maxillary growth, and in others a protrusion of the mandible for convenience.

Present-day appraisal for orthodontic treatment includes a determination chiefly of such factors as heredity and endocrine disorders. Accordingly, the clinician confronted with the treatment of a Class III malocclusion must determine, as far as possible, the relationship of these factors to the growth disharmony. This diagnosis of cause is essential since the first step in the treatment of the incipient case is the removal of the cause. A third factor which assumes greater importance in the other classes of malocclusion but becomes relatively unimportant in the Class III malocclusion is the temporary inhibition to facial growth due to ill health. Children with this class of malocclusion have, as a rule, been found to be constitutionally healthy.

The close relationship between Class III malocclusions caused by genetic factors and those occasioned by imbalances of the endocrine system makes differentiation between them difficult. In some instances, though not always, hereditary growth tendencies appear to operate through the endocrine system.

Read before the American Association of Orthodontists, Kansas City, Mo., April, 1939.

For example, Harrison[2] and others have shown in their experimental work that the transplantation of limbs and other structures taken from two species of different size will, under the same endocrine environment, respond differently and according to their inherited capacity. The power to grow is inherent in the cell. Carefully compiled case histories frequently indicate that the Class III manifestations may be the outcome of genetic tendencies.

Failing to find either a genetic influence or one associated with ill health, the cause may be investigated through the endocrine system. Evidence has been presented by Hellman,[3] Howard,[5] Humphrey,[6] Kelsey,[7] and others, demonstrating the possibility of an association of endocrine imbalance to Class III malocclusion. Howard's investigations[5] show that an accelerated carpal development is frequently associated with the typical Class III malocclusion. This manifestation of Class III type he has designated as "acromegaloid."

In contrast to this acceleration accompanying the typical Class III malocclusion, one can frequently observe in the atypical varieties a delayed carpal development. It is not to be inferred that retarded carpal development alone indicates Class III malocclusion. This condition is also manifest in other types of malocclusion. The significance of this retardation is not fully understood, but it has generally been attributed to a marked constitutional disturbance from which the child has not fully recovered. It may be a slow unfolding of the growth pattern. It has, however, been accepted by authorities as an indication of endocrine disorders. One of the most common disturbances in the endocrine system associated with various types of malocclusion as indicated by Table I is hypothyroidism. If such a cause is suspected, reference to the case history frequently reveals the fact that the mother has a hypothyroid condition or history. Thyroid disturbances in either parent may be significant. Shelton[8] reported familial hypothyroidism in four California children. However, such a condition is likely to be found more frequently in children living inland.

TABLE I

BLOOD CHEMISTRY AND BASAL METABOLISM TESTS OF PATIENTS WITH VARIOUS TYPES OF MALOCCLUSION (THE BASAL METABOLISM RATES OF MOST OF THESE INDIVIDUALS ARE BELOW NORMAL OR AT THE LOWER LIMITS OF NORMAL)

NAME	DATE	AGE	CA.	P.	I.I.	F. SU.	CH.	B.M.R	R.B.C.	W.B.C.	HB.
					(Too)						
I. B.	17/ 9/34	14	11.8	2.1	(Red)	117	113	+ 5%	3,910	11,000	98%
I. B.	24/10/34	14						-20	4,004	11,400	90
D. J. C.	7/ 7/34	12	10.0	6.9	12		220	-10	4,260	7,650	80
	7/ 8/34	12						-13	4,340	9,750	
B. D.	11/ 7/34	12	14.8	5.0	7	112.9		-24	5,810	10,150	75
J. E.	11/ 7/34	16	9.4	4.1	7	114	138	-22	4,570	4,250	76
	21/ 8/34									8,900	96
D. H.	1/ 2/35	19	11.7	3.7							
D. McM.	10/ 7/34	35	12.8	4.4	6	100	176	-12	4,520	6,900	98
	20/10/34		9.9								
Mrs. R.	6/ 2/34		10.6	3.66		11		+11			
	12/ 2/34							-1			
	7/ 5/34		10.2	2.7	7						
Miss. R.	30/ 5/34	49	11.0	1.73	6	37	294	-15	5,610	7,500	76
	14/ 7/34		10.6	3.08	7	117	268		5,670	8,350	86
	26/11/34		9.0	3.08			256				
	8/ 4/35		12.0	4.0		75	242	-10			
S. S.	/10/34	10	10.7	3.7				98			
B. S.	5/ 3/35	16	9.9	3.9			240	+ 7(?)	3,500	8,200	100

In addition to the family history, many clinical symptoms in the young child as dry hair, dry skin, brittle finger nails, retarded development as shown in a roentgenogram of the hand are important indications of hypothyroidism. If the condition has not been previously recognized, such symptoms constitute a basis for referring the case to the medical service. And because of its effect on facial growth, hypothyroidism should receive treatment by the medical service prior to, or concurrent with, orthodontic treatment.

Of the various endocrinopathies, hypothyroidism is perhaps at the present time the best understood. It has, therefore, been given particular attention in this discussion. No doubt other imbalances in the endocrine system, which are at present unrecognized, are equally important. Howard's investigation, to which reference has already been made, indicates that the influence upon facial growth of one of these, namely, hypopituitarism, became accentuated so that cases may be recognized clinically about puberty.

RETARDED MAXILLARY GROWTH

Todd and Wharton[9] studied the effect of thyroidectomy upon cranial growth. They used twin sheep and removed the thyroid gland at an early age from one animal and used the other as control. A few months later the snout of the thyroidectomized animal was found to be shorter and upturned as compared with that of the control animal. Their experiments indicate that the face is affected by disturbances in the endocrine system and suggest the possibility of a similar effect—which further research may substantiate—in the case of hypothyroid children. When hypothyroidism occurs early, the forward growth of the whole face or only the upper part of the face may be retarded. When, however, the latter only is affected, even if only to a slight degree, an interference in the incisor region results. A forward positioning of the mandible relieves the interference but further retards the forward growth of the maxilla through the production of linguoversion of the maxillary incisors.

The report of such a case from practice illustrates the advantage of early recognition and treatment in the incipient stage. The patient, a girl, 4 years of age, was presented with linguoversion of the left maxillary deciduous first incisor (Fig. 1). The forward placement of the mandible was for convenience, which was clearly indicated by the end-to-end relationship of the deciduous incisors when the mandible was retruded (Fig. 2). The case was diagnosed as atypical Class III malocclusion. Local treatment in this case was merely a reduction of the interference between the inlocked deciduous incisors by means of a stone in the dental engine. Fig. 3 shows a photograph of the teeth after treatment. A roentgenogram of the hand revealed a physiologic age of 2 years, 2 months, almost two years behind Todd's standard[9] for the girl's chronologic age (Fig. 5). After the dental interference was removed, the case was referred to the physician for diagnosis and treatment. Fig. 5 shows the progress in carpal development in the case seven months after general treatment consisting of the oral administration of thyroxine by the pediatrician.

Because of the interesting genetic background, another case of atypical Class III malocclusion showing diminished maxillary growth is presented. The

patient, a 21-month-old girl, was brought to me because of a tongue-sucking habit in which the tongue was placed between the maxillary teeth and lip. The mother reported that at birth the upper gum pad was behind the lower. A

Fig. 1.

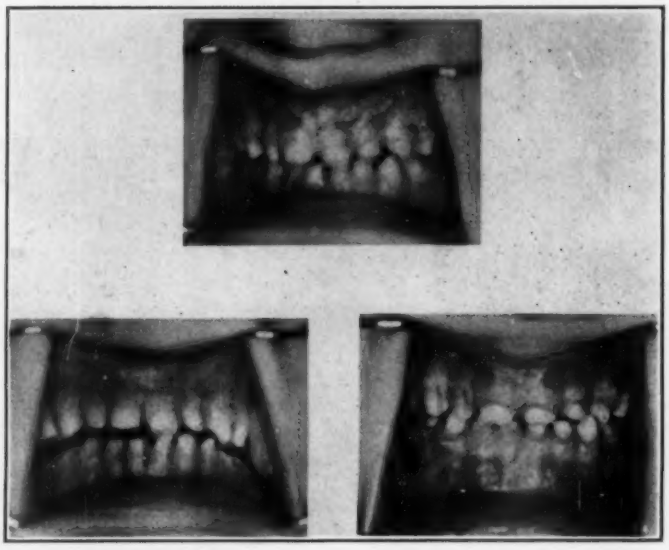

Fig. 2. Fig. 3.

Fig. 1.—Incipient atypical Class III malocclusion in a girl 4 years old. Because of the lack of forward growth of the maxilla resulting in interference between the left deciduous first incisors, the mandible is protruded and displaced to the left.

Fig. 2.—The same case with the mandible retruded. Note the end-to-end relationship of the maxillary left deciduous first incisors.

Fig. 3.—The same case shown in Fig. 1 seven months after the interference between the left deciduous first incisors was removed by means of a stone in the dental engine.

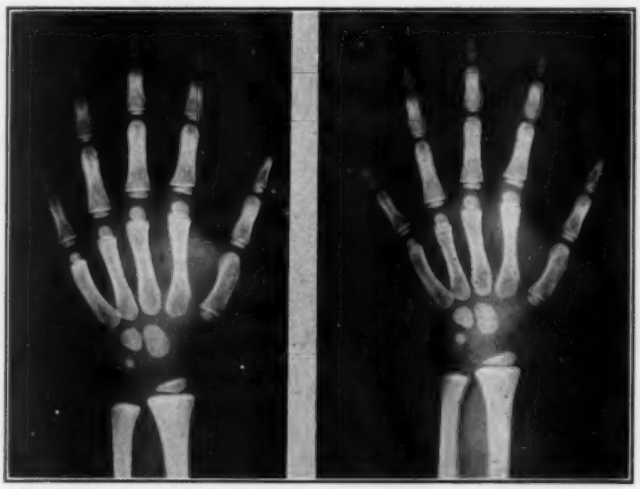

Fig. 4. Fig. 5.

Fig. 4.—A roentgenogram of the case shown in Fig. 1 indicates retardation in carpal development of about two years.

Fig. 5.—A hand roentgenogram of the same case showing progress in carpal development during seven months.

photograph of the child at the age of ten months is shown in Fig. 6 (second row, fourth from left). The girl's brother, who sucked his thumb, is shown

third from left. Their mother, who was born in the United States, was of Irish descent, while the father was Canadian born of Dutch extraction. Further investigation of the hereditary background revealed similar jaw growth disharmonies in the patient's paternal grandfather and in her maternal great-aunt which indicated genetic linkage (Fig. 6). The inhibition in the forward growth of the nasomaxillary area was, therefore, diagnosed as genetic in origin; the tongue habit was considered as an attempt upon the part of the organism to compensate structural disharmonies and secondary to the growth anomaly. Casts

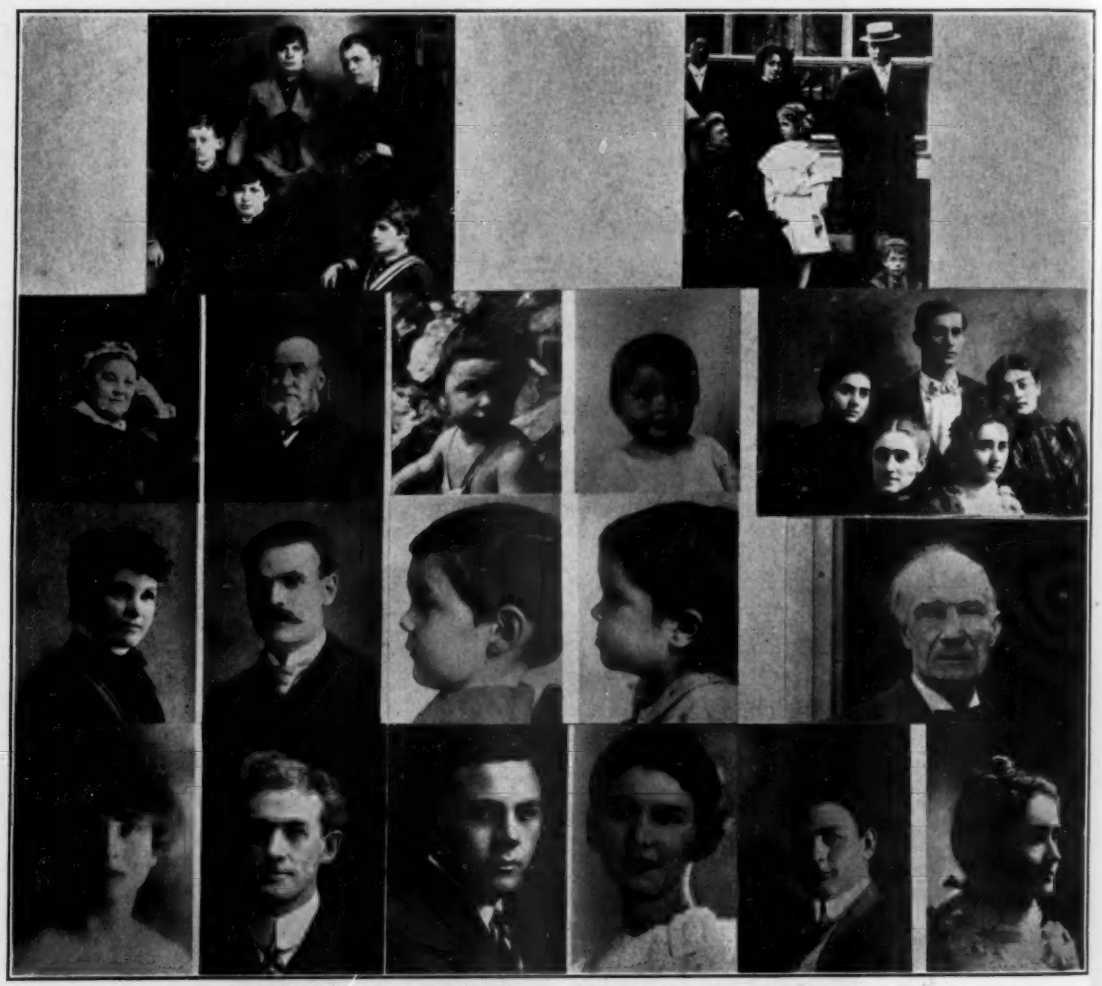

Fig. 6.—Relatives shown are from left to right: lower row—patient's paternal grandparents, father and mother, and maternal grandparents. Second row from bottom—paternal great-grandparents, patient's brother at five and one-half years, patient at three years and three months, and maternal great-grandfather. Third row—paternal great-grandparents, patient's brother at ten months, patient at nine months, maternal great-aunts and great-uncle. Top row—left, paternal great-aunts, great-uncle and grandfather (extreme left); right, maternal great-grandmother (seated), maternal grandmother (rear), maternal grandfather (standing right), great-uncle (standing left), maternal second cousin (seated right). Genetic linkage is indicated in the paternal grandfather and maternal great-aunt.

of the case before the beginning of orthodontic treatment are illustrated in Fig. 7. In this case, the pediatrician instituted thyroid therapy about the age of 2 years. Orthodontic treatment was deferred until the age of 3 years and 3 months, when a maxillary lingual arch with auxiliary springs to tip the deciduous

Fig. 7.

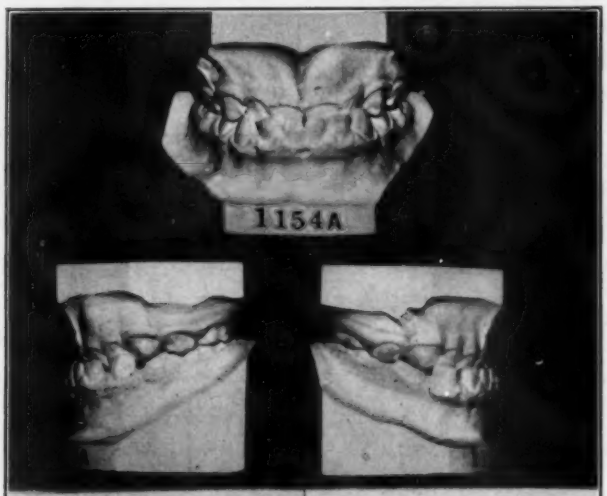

Fig. 8.

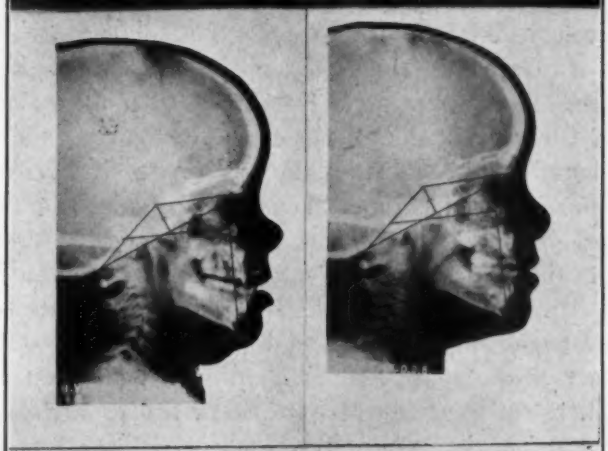

Fig. 9.

Fig. 10.

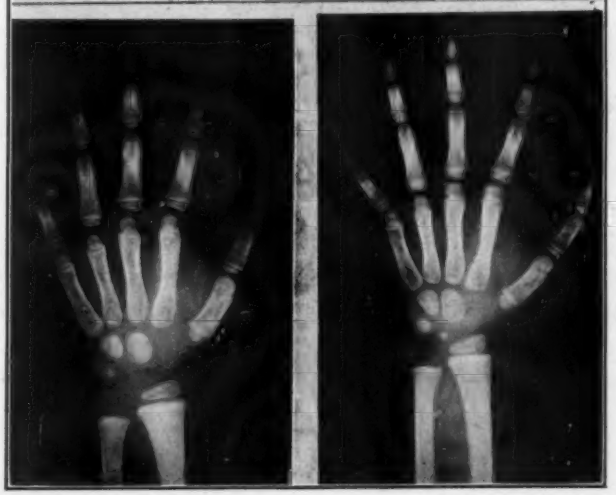

Fig. 11.

Fig. 7.—The casts of a 3-year-old girl with an atypical incipient Class III malocclusion.

Fig. 8.—The profile roentgenogram of the case before treatment.

Fig. 9.—A similar roentgenogram one year later. The case received four months orthodontic treatment.

Fig. 10.—A roentgenogram of the patient's hand before beginning of treatment. Note the retarded carpal development.

Fig. 11.—Progress in carpal development shown in roentgenogram of the hand taken one year later.

incisors labially and a mandibular labial arch were placed. At the end of four months a protrusion of the maxillary teeth was produced by the action of the intermaxillary elastics. Following the removal of the lingual and labial arches at this time, the masticatory muscle exercise was prescribed. Cooperation was however, only fair. During treatment the tongue-sucking habit was discontinued. Owing to a fall from a tricycle at the age of 18 months, the root of the left maxillary deciduous incisor failed to complete its development; during treatment a periapical infection developed and the tooth had to be extracted. The maxillary lingual arch, carrying an artificial substitute, was readjusted and is being worn until the eruption of the permanent successor.

Fig. 8 shows the profile roentgenogram of the case before orthodontic treatment and Fig. 9, one year later. Figs. 10 and 11 illustrate the progress in carpal development during the same period.

Treatment of such cases at this age appears to be in harmony with the findings of careful observers that this period is one during which anteroposterior jaw growth is accelerated. Hellman[3] states, "The highest percentage of anteroposterior growth occurs between completion of the deciduous dentition at three and the commencement of eruption of the first permanent molars at six." The manifestations of Class III malocclusion are so disfiguring and the disharmony so inhibitory to maxillary growth that the advantages of treatment in this class of malocclusion, particularly if undertaken during the incipient stages, outweigh the disadvantages. However, Hellman's conclusion with reference to Class III malocclusion, that the "earlier treatment is completed the more severe the relapse," does not support this view. Some clinical experience seems to support a more optimistic conclusion. We present a case of "typical Class III malocclusion treated seventeen years ago in incipiency which has been reasonably successful (Fig. 12). In this case there is genetic linkage; the patient, a girl, not only resembles her father, but also walks like him. While there has been a slight tendency to relapse in the occlusion of the buccal teeth, the maxillary incisors have, despite the overgrowth in the mandible, maintained a position labial to the mandibular incisors. Treatment in this case, accomplished with maxillary lingual and mandibular labial arches and intermaxillary elastics, was begun when the patient was 4 years and 9 months old; it was discontinued after four months. At this stage the interference to maxillary growth was removed. However, as forward growth of the maxilla did not occur at the same rate as that in the mandible, similar treatment was found necessary for a period of eight months following the eruption of the maxillary permanent incisors. No subsequent treatment was given the girl. Fig. 13 shows the photographs of casts and Fig. 14, the profile roentgenogram of the girl at 21 years of age.

PRINCIPLES OF TREATMENT

As knowledge relative to orthodontics advances, the principles governing orthodontic treatment must be revised from time to time to keep pace with the newer knowledge. Mechanical treatment of incipient cases has long been advocated, but it is only in recent years that we have learned the reason this treatment is effective during incipiency: the mechanical stimulus is applied during periods of accelerated jaw growth, and the mechanical stimulus parallels the direction of growth.

This principle of harmonizing treatment with the direction of growth during growth acceleration appears, in the light of recent knowledge, to be fundamental. The stimulus to forward growth of the maxilla in incipient atypical Class III malocclusions, if accomplished before the eruption of the maxillary six-year molars, is in harmony with this principle.

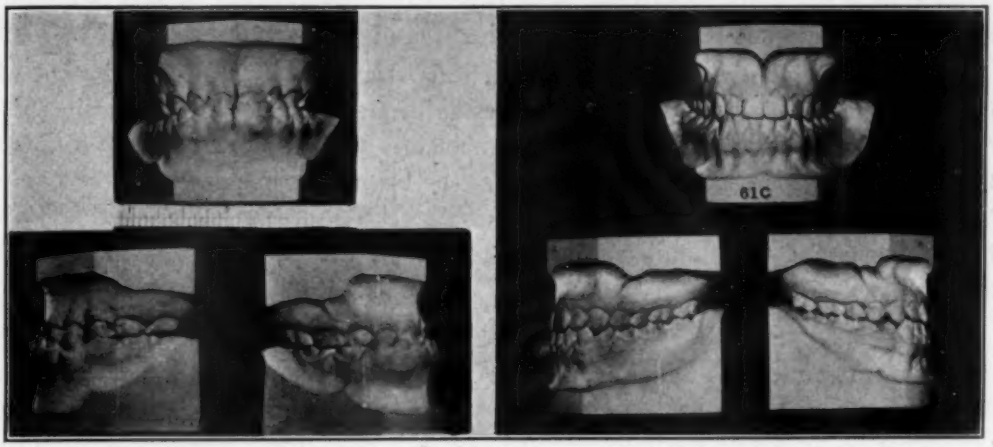

Fig. 12. Fig. 13.

Fig. 12.—The casts of a girl aged 4 years, 9 months, with a typical incipient Class III malocclusion showing genetic linkage.

Fig. 13.—Shows the case seventeen years later (see text).

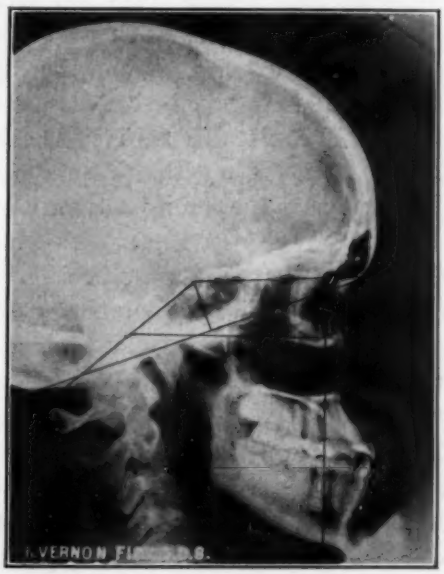

Fig. 14.—A profile roentgenogram of the case at the age of 21 years.

A second principle, to which all orthodontists can heartily subscribe, logically follows adherence to the first principle, namely, that the orthodontic correction should be made with minimal mechanical treatment. Most of us have had cases in which treatment has been too prolonged. Such protracted treatment has been detrimental to the progress of orthodontics and has reflected unfavorably, not only upon the orthodontist, but upon his specialty as well. The

ideal occlusion, which was such a fetish with some operators a few years ago, has in the main given way to a wider concept of normal. It seems unreasonable to expect the orthodontist to attain greater occlusal perfection than found in the mouth of the average individual today who has received no orthodontic treatment. This is not a reflection upon our ability as technicians but involves the setting of a standard which is more practical. Application of the principle of minimal treatment is an important indication of progress in orthodontics.

A third principle, which is fundamental to successful treatment, is that of continuing active treatment beyond the establishment of the normal relationship of the teeth. This principle is quite in harmony with the principle of minimal treatment because in most cases it reduces the length of time required for retention of the case and sometimes eliminates the retention period altogether. In the treatment of the incipient Class III case all three general principles are applicable.

MECHANICAL THERAPY

In the treatment of incipient Class III malocclusion, the simpler types of appliances have been found satisfactory. The lingual appliance on the maxillary denture and the labial appliance upon the mandibular denture, supplemented by intermaxillary elastics, are almost universally employed in Class III malocclusion in the deciduous dentition and in many cases of this type treated during the period of mixed dentition. In some cases of mixed Class III malocclusions, a mandibular removable lingual plate with a steep bite block has been employed to reduce the overbite prior to the use of the maxillary lingual arch, the mandibular labial arch, and intermaxillary elastics. When the lingual plate is made in the new colorless acrylic resin, it is relatively inconspicuous. However, the use of the mandibular removable bite plate in such cases may be obviated by the employment of an appliance upon the maxillary teeth which is attached to the incisors by means of bands, such as the Johnson twin wire or the McCoy labial arch wire. With such an appliance, manipulation to effect intrusive as well as labial movement of the banded teeth reduces the interference as they are moved forward. Even with root-moving appliances, forward growth of the area beyond the apices of the roots does not always appear to be influenced by forward movement of the teeth. In the incipient Class III cases, however, the simpler forms of appliances are recommended.

The possibility of treating malocclusion without the use of an orthodontic appliance broadens the scope of orthodontic service to include treatment for those who for economic, hygienic, or other reasons are denied this service. A simple instrument, which is not new, having been presented at a clinic in 1932, employs the resiliency of rubber to effect changes in the direction of growth. The device, called the rubber dental stimulator, consists of a molded piece of rubber having a flattened portion or bite block, a shaft, and a handle (Fig. 15). Its effectiveness is, of course, dependent upon the cooperation given by the patient. While it may be used in the treatment of selected cases of all classes of malocclusion, its application in the treatment of an incipient Class III case is illustrated in Fig. 16. Modifications in the shape of the device may be made to suit the specific requirement of a given case, as follows: from a wax pattern a plaster

mold is made, and, after the wax has been eliminated, liquid latex is poured into the mold. After the substance is allowed to stand for twenty-four hours, a rubber of satisfactory resiliency is produced. The following are instructions given the patient in the use of the stimulator for treatment of a case of incipient Class III malocclusion: "To stimulate the growth of the maxilla, place the exerciser between the incisor teeth, close firmly upon it, at the same time retracting the mandible slightly. This has a tendency to tip the handle toward the chin. Now grasp the handle with the right hand and pull downward and forward, extending the shaft about one-half inch. Count five slowly, then relax; repeat until the muscles tire. Gradually increase the number until a total of at least twenty-five contractions can be made at each of four sessions, making a daily total of one hundred contractions."

Fig. 15.

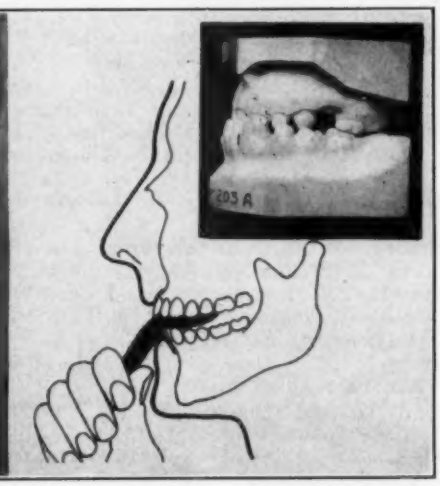

Fig. 16.

Fig. 15.—Rubber dental stimulator. To stimulate forward growth of the maxilla the teeth are closed upon the flattened portion or bite block, *A*, while the hand grasps the handle *C* and extends the shaft *B* about one-half inch.

Fig. 16.—Sketch showing the use of the rubber dental stimulator to promote maxillary growth in an incipient Class III malocclusion (inset).

MYOFUNCTIONAL THERAPY

Following the reduction of the deformity and the establishment of normal occlusal relationship, attention is directed to the development of the musculature. In Class III malocclusions the limitations of function are reflected in weak temporal muscles. Repeated voluntary contractions of the masseter and temporal group upon the clenched teeth not only assist in maintaining the occlusion of the teeth but through the muscle stimuli tend to promote a uniform rate of growth between the maxilla and mandible, exerting a mild restraining influence to overgrowth of the latter and encouraging a stimulation to normal forward growth of the former. The rubber stimulator may also be used in conjunction with muscle therapy.

SUMMARY

Incipient Class III malocclusions are characterized by growth disharmonies, the typical varieties by inherent overgrowth of the mandible in which genetic

linkage can usually be traced; the atypical varieties by diminished maxillary growth which may also be genetic in origin and frequently accompanied by retarded carpal development.

Notwithstanding the genetic background, mechanical treatment of Class III malocclusions may be undertaken in incipiency with simple appliances.

In the young child retarded carpal development accompanied by other clinical symptoms may indicate hypothyroidism which should be treated by competent medical service preceding, or concurrent with, mechanical therapy.

Finally, myofunctional therapy alone or in conjunction with the rubber stimulator is a useful aid in the maintenance of the corrected case.

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A MANDIBULAR RETRACTION COMPLICATED BY AN IMPACTION OF THE RIGHT MAXILLARY INCISOR

Case Report

Earl F. Lussier, San Francisco, Calif.

THIS report was selected because of the value it might have in the field of retention.

History.—The patient, a boy 16 years of age, presented a dentofacial deformity that involved the development of the chin. The condition was complicated by the uneruption and impaction of the maxillary right central incisor (Fig. 1). There was no evidence of this particular deformity on either side of the family. He was a country boy; his general health was good; and he had had no prolonged or serious illness. His nutrition was fair. His temperament was phlegmatic. There was no known cause of the deformity.

Diagnosis.—Photographic facial reproductions, gnathostatic plaster denture reproductions, and graphs of the gnathostatic plaster denture reproductions were made (Fig. 1). Roentgenographic examinations (Fig. 2) were taken. An appraisal of the material showed the anomaly in relation to the:

A. Raphe Median Plane (relation of the lateral halves of the denture to the median plane) involves in the maxillary arch a total dental contraction, mild and asymmetrical, and in the mandibular arch an anterior dental contraction, asymmetrical. The figures comparing the width between the molars and the premolars to Pont's normal are (Fig. 1):

Distance between $\underline{4}|$ and $|\underline{4}$ −3 mm.

Distance between $\underline{6}|$ and $|\underline{6}$ −1 mm.

Distance between $\overline{6}|$ and $|\overline{6}$ +0.5 mm.

Distance between $\overline{4}|$ and $|\overline{4}$ −1.5 mm.

B. Orbital Plane reveals, both in the facial reproduction (Fig. 1) and the denture reproduction, in the maxillary arch a mild maxillary protraction and in the mandibular arch a total mandibular retraction extreme, the amount of the retraction being the same on both sides (Fig. 1).

C. Eye-Ear Plane involves in the maxillary arch a normal development. In the mandibular arch a total mandibular attraction exists due to the mandibular retraction (Fig. 1).

Read before the eighteenth general meeting of the Pacific Coast Society of Orthodontists in San Francisco, Feb. 21, 1939.

Therapy Employed.—The therapy used was first, surgical, second, mechanical, and third, myofunctional. The surgery consisted of removing the tissue and a small amount of labial bone overlying the crown of the impacted maxillary right central incisor. The mechanical therapy was immediately instituted and

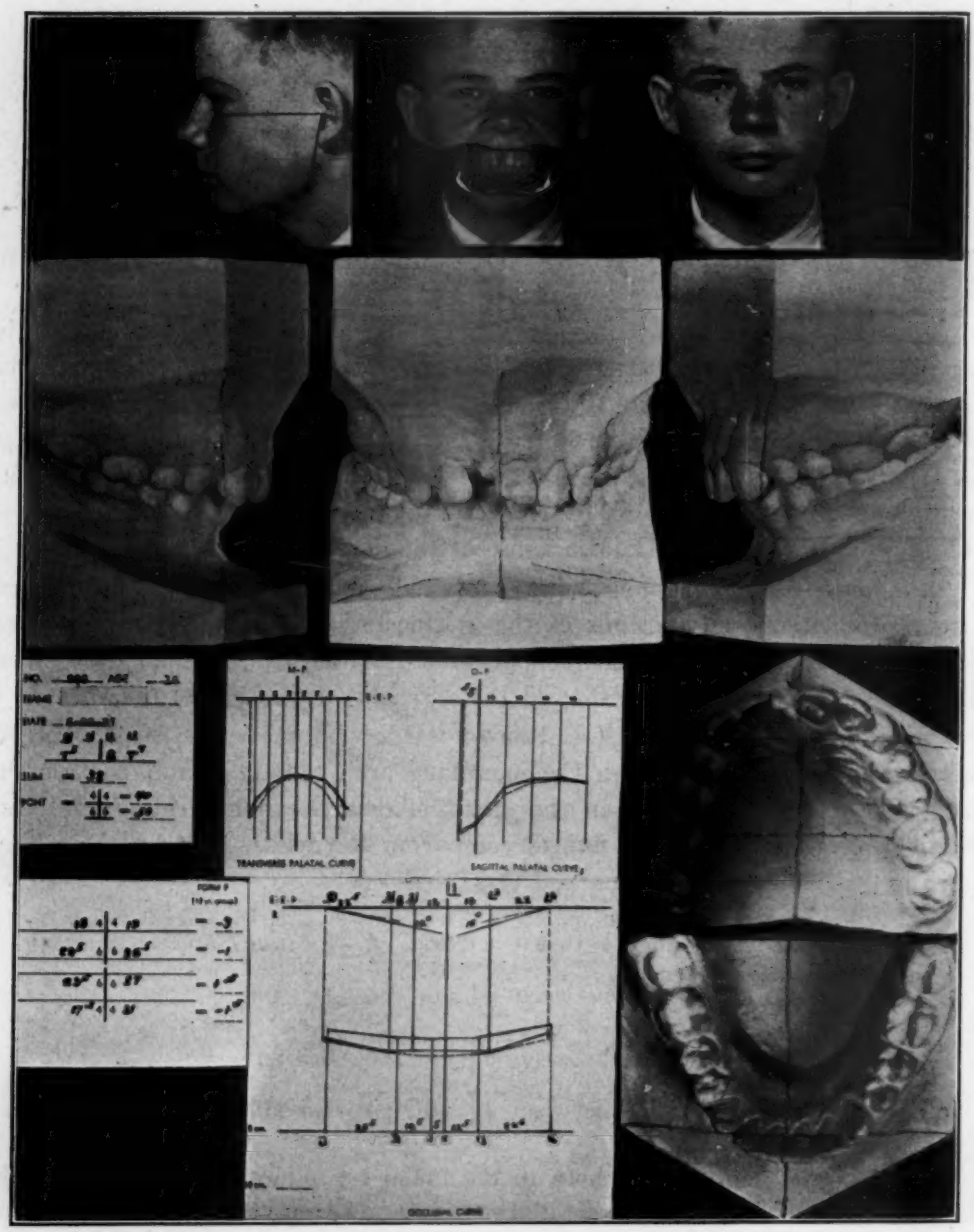

Fig. 1.

continued for a period of one year and consisted in the use of a maxillary appliance and a mandibular appliance. Intermaxillary elastics were used for a period of ten months.

Maxillary Appliance.—The maxillary appliance (Fig. 3 *A*) consisted of anchor bands of 0.007 inch in thickness and 0.018 inch in width, fitted to the

maxillary first permanent molars. Lingual half round tubes, D. 10, were soldered to the lingual surfaces of the molar bands; impressions were taken with the bands in position; and an artificial stone model was poured. A lingual wire 0.040 inch in diameter was then adapted to the lingual surfaces of the teeth on the cast. It was adjusted in position by the heat treatment method.

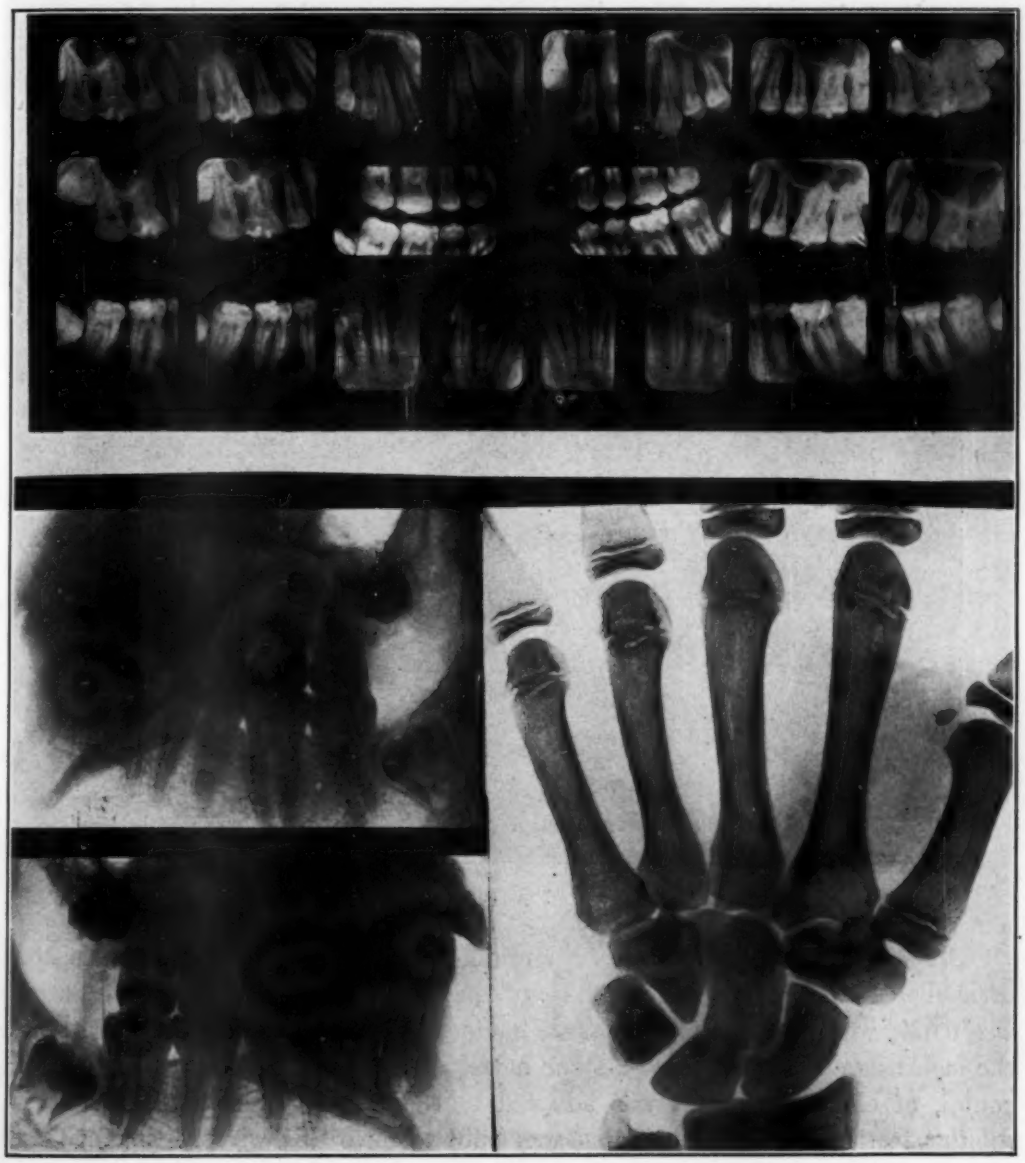

Fig. 2.

Finger springs 0.020 inch in thickness, of the simple spring type, were soldered to the body wire in the region of the premolars. Round tubes 0.025 were soldered to the buccal surfaces of the molar bands. Anterior bands, 0.015 inch in width and 0.003 inch in thickness, of chrome material were adapted to the maxillary right canine and lateral incisor and the left central and lateral incisors

and canine. Snap brackets, 0.022 size, were welded on the labial surfaces. The maxillary molar bands and incisor bands were cemented, and the lingual arch was placed. An 0.022 round labial arch (Fig. 3 *B*) of chrome wire was adapted and so bent that stops were formed at the buccal tubes on the molars. Hooks were formed for the use of intermaxillary rubbers and a loop made between the right lateral and left central incisors. This arch was placed at first passively. It was ligated to the maxillary first premolars for stability. At subsequent adjustments the labial loop was opened up, and the impacted central incisor gradually erupted. When it had erupted sufficiently, a band was adapted and an 0.022 snap bracket was welded to the labial surface.

Fig. 3.

Mandibular Appliance.—The mandibular appliance (Fig. 3 *C*) consisted of anchor bands on the mandibular first permanent molars. Lingual sheaths, size 0.030, were welded to the lingual surface. An impression was taken with the molar bands in place, and a stone model was poured. A lingual wire, 0.030 round, of chrome material was adapted to the lingual surfaces of the mandibular teeth; particular attention was paid to have this wire resting against the lingual gingival of the mandibular incisor teeth. Buccal tubes, 0.025 size, were welded to the buccal surfaces of the molar bands. A round labial arch (Fig. 3 *D*) of chrome wire, 0.022 inch in diameter, was formed so that stops were made in front of the buccal tubes, and the anterior segment was bent up in the canine area so that the front segment rested against the incisal thirds of the mandibular incisors. The molar bands were cemented, and the arches were placed passively. At subsequent adjustments the labial arch was adjusted to

bear against the incisal thirds of the incisors, producing a lingual movement of the incisor crowns and a labial movement of the roots. This movement was aided by the gingival position of the anterior portion of the lingual arch. In two months the widening of both mandibular and maxillary arches permitted the movement mesially of the mandible by the use of intermaxillary elastics. The elastics were worn for a period of ten months. At the end of a year a completion of the case was made. All bands and appliances were removed. No mechanical retainers were used.

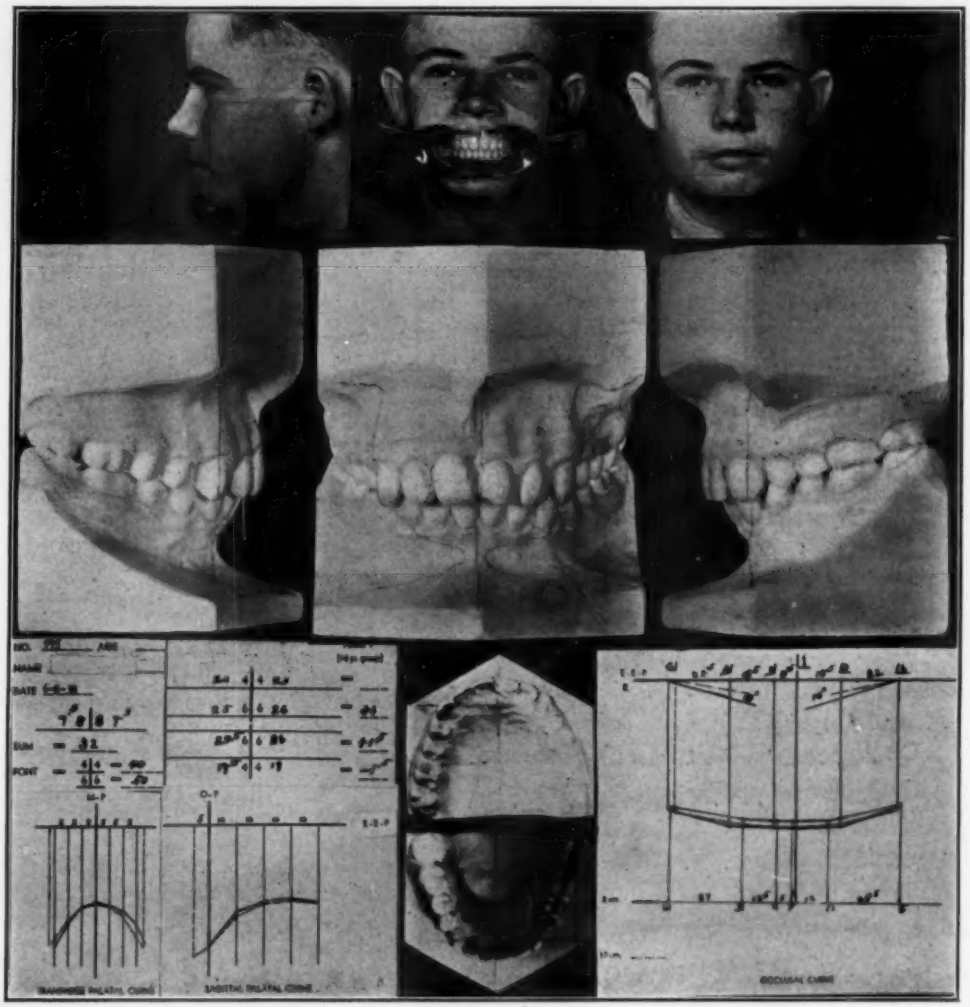

Fig. 4.

Myofunctional Therapy.—The pterygoid exercise was prescribed during that period of active treatment when intermaxillary elastics were being used and was continued after active treatment was discontinued. All bands and appliances were removed. Masseter-temporal muscle exercises were prescribed on the completion of the active treatment period. A general tonic exercise was also prescribed at this time.

Results Achieved.—The examination was made June 30. The surgery was performed on the maxillary right central incisor July 2. The maxillary and mandibular appliances were placed July 6. The use of intermaxillary elastics was started September 1. The active period of treatment was one year. At the end of that time all appliances were removed. Photographic facial reproductions, gnathostatic plaster denture reproductions, and graphs of the gnathostatic plaster denture reproductions were made (Fig. 4). The change in occlusion and facial features approached the normal. No mechanical retainers were used, but myofunctional therapy was continued. After nine months of this

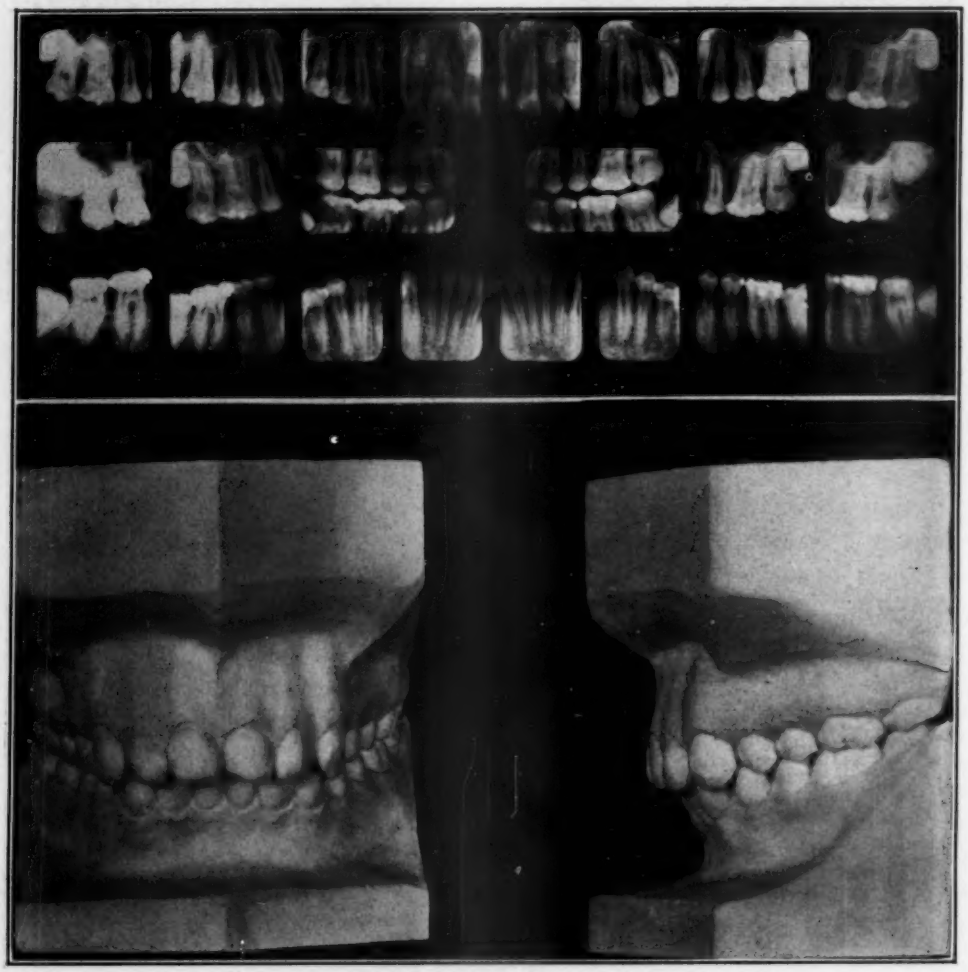

Fig. 5.

retentive period gnathostatic denture reproductions were made, and radiographic examinations were taken (Fig. 5). A better interdigitation of cusps of teeth, as well as a further change toward the normal facial development, was discernible.

Prognosis.—The phlegmatic temperament of the boy produced a very methodical and cooperative spirit. The last records, taken nine months after

completion of mechanical therapy and with no mechanical retention, might well permit one to feel that the prognosis in this case is excellent.

Observation and Conclusion.—An interesting and valuable observation is the comparison of data collected before treatment (Fig. 6 *A*) and after treat-

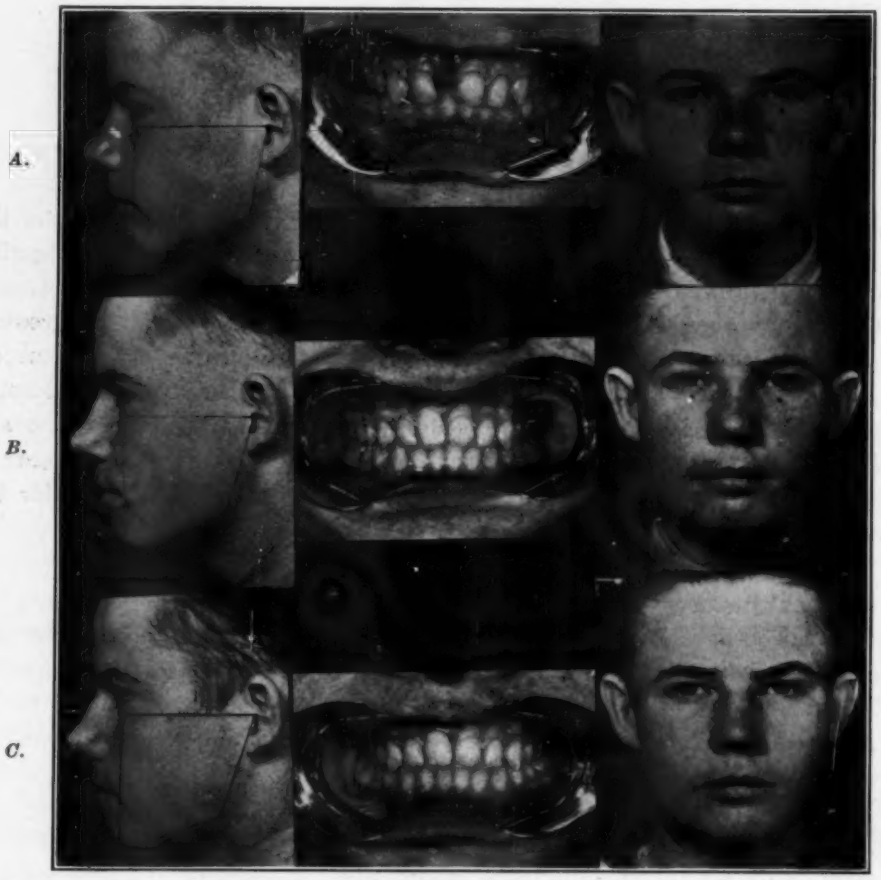

Fig. 6.

ment (Fig. 6 *B*) and nine months after all active mechanical therapy had been discontinued (Fig. 6 *C*). Additional data may be obtained in the future if conditions permit.

450 Sutter Bldg.

THE TREND OF CLINICAL ORTHODONTICS

PART II

PROCEDURES IN TREATMENT

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AT A previous meeting, it was my privilege to present opinion on some of the essential factors underlying the present trend of clinical orthodontics. The time then available permitted only a consideration of the scientific fundamentals that are engaging the attention of investigators and progressive specialists. Today, we shall endeavor to continue consideration of the subject by outlining procedures in treatment as we have been able to observe and apply them in practice in the light of our increasing knowledge of growth processes.

Orthodontic treatment must be based on thorough diagnosis and correct classification. Requirements for this may be conveniently grouped under the following headings:

1. Personal examination of the patient.
2. Personal history—as full as possible.
3. Careful observation of the nasal region and breathing. When abnormalities are found, the rhinologist must be consulted by the patient and all possible corrections made.
4. A complete set of intraoral radiograms. These should be supplemented by extraoral films when indicated.
5. Dental casts from accurate impressions, oriented to the cranium.
6. Photostatic facial reproductions made to uniform scale.
7. Graphs or plane reproductions, which are very helpful. These may be made by the method of Paul Simon or by the use of the orthodontoscope. Either will suffice, although each procedure has some advantages over the other.

Each step might well be elaborated, but lack of time will forbid. Suffice it to say that not a single step enumerated can safely be neglected.

When, after careful study of all known conditions, the diagnosis and the classification are made, the next step will be the decision of sequential steps in treatment.

Orthodontic treatment may also be considered as follows:

1. Physiologic, as for example, thorough use in mastication, deglutition, speech, and breathing.
2. Psychologic, for example, habit breaking, clear enunciation, and definite functioning of associated musculature.
3. Artificial exercisers, as the rubber bite strap, odontobel, and chewing of resistant gum.

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4. Myofunctional therapy (after Alfred P. Rogers) which is most beneficial when properly prescribed and good ecooperation is obtained.

5. Medical aid, as by the pediatrist and the rhinologist. Patients can frequently be referred to definite and positive advantage.

6. Surgical assistance, as removal of supernumerary teeth and impactions, repair of cleft palate or cleft lip, uncovering of impacted crowns to be moved to proper position.

7. Appliance therapy.

The first six steps in treatment are to be carefully considered and applied when indicated before appliance therapy is used. In some cases so much benefit can thereby be brought about that correction can be effected without appliances. In another group of cases, the improvement obtained is sufficient so that, at most, a mechanism of simplest type need be worn, and for only a comparatively short time. In this group the treatment exercises should be continued to supplement the effect and shorten the time of appliance wearing. In other words, we feel that corrective appliances should be used only as a final resort and should be worn for as short a period as is possible to obtain a satisfactory result. The essential question in appliance therapy is *when* rather than *how*. There is just one best time to begin appliance treatment. There are a number of methods as to how it may be done, each of which if properly applied will produce acceptable results. In making the important decision as to when to place appliances, we invariably ask ourselves this pointed question: "Were this a child in my own family, would I burden the little mouth with appliances now?" Thus, all considerations are eliminated except the essential one. Even when the answer is against immediate appliance therapy, if there is tendency to lack of proper development and growth, we recommend that the seven requirements for an orthodontic diagnosis and classification be followed, as outlined. This record, including casts, radiograms and photograms, will serve as a means of comparing the progressive growth as the patient returns at stated intervals for observation. Without these records, the visits for observation are futile because accurate comparison is impossible.

The planning of *mechanical therapy* should also be based on careful study. Two prerequisites are strongly urged as preliminaries to every appliance treatment. These are:

1. Case analysis and
2. Arch predetermination.

These we regard as essential to best treatment. This, we feel, applies absolutely to the beginner and should also be routine with the most experienced. We believe this to be more important for the welfare of the patient than the type of appliance chosen. No single factor will reduce the need for prolonged appliance wearing more than this. We shall now consider each somewhat in detail:

1. *Case Analysis.*—This may be made in one of several ways. We shall consider two of these:

A. The gnathostatic method introduced by Paul Simon of Germany and elaborated by several of our American colleagues. This offers a satisfactory means of orienting the denture with the cranium. This is a most important consideration in treatment planning. The detail may seem exacting and time-

consuming, but when mastered it takes little, if any, longer than any thoroughgoing method. It has an important advantage in that each of the several steps must be followed in each case or a diagnosis and classification cannot be obtained. It is not absolute and like all else requires care to prevent personal error. This is especially true in placing the spots over anatomic landmarks and also in making decisions concerning unusual variations in arch forms and relationships. We feel that after even limited experience, it offers the beginner a method of utmost assistance in classification, appliance planning, and the outlining of treatment procedure, regardless of the type of mechanism to be used.

B. Case analysis as used by Robert H. W. Strang. Those who are not given to surveying casts and making graphs may find this method more to their liking. It is fully described in Chapters XVIII and XIX of his *Textbook of Orthodontia.*

CASE ANALYSIS (AFTER STRANG)

1. Inclined plane relationship.
2. Axial inclination.
3. Radiograms—supernumerary teeth, missing teeth, malformations.
4. Molar rotation.
5. Median line relationship.
6. Photograms—preferably oriented to a fixed plane. *The history* and notes from the personal examination of the patient are a part of the study. *Dental casts,* from accurate plaster impressions, are carefully analyzed in accord with the steps enumerated. The *classification* and *appliance therapy,* in its sequential steps, are written out before beginning the construction of the mechanism. Dr. Strang goes so far as to indicate the type of retention he expects to use. This serves those who have followed it quite satisfactorily. The Angle classification is used with stress upon the variability of the mesiodistal positions of the permanent first molars. It permits a much more thorough diagnosis, classification, and treatment planning than that usually employed. We have applied the procedure in a percentage of cases for the past two years and find it very helpful. We can recommend it strongly to those who are disinclined to take up the gnathostatic method. I hope, however, that Dr. Strang and his followers will not take offense when I express the opinion that the precise routine compelled by the gnathostatic technique tends to make for less variation in the findings and points out more definitely the existing abnormalities. I feel strongly that the orientation of the casts to cranial anatomy made possible by the Simon method affords valuable information that is not possible by the other procedure. On the other hand, I feel that by combining some of the steps of Dr. Strang's case analysis in the interpretation of the Simon graphs the problem involving treatment procedure will be made more clear, especially to the beginner. Either of these methods is applicable to any type of appliance treatment.

2. *Arch Predetermination.*—This we regard as essential to the most direct and best treatment. This applies absolutely to the beginner and should also be routine with the most experienced. We believe this more important for the welfare of the patient than the type of appliance used. No single factor in appliance therapy will reduce the need for prolonged appliance wearing

more than this. The term, in some respects, is most inconsistent, and yet it is apt because it suggests the laying out of a general plan of the end result desired, and without this, the treatment could not be planned and would proceed in a relatively indeterminate way. We believe in working according to a general preconceived plan in the full consciousness and smug satisfaction that nature will, in the end, make the nice little final adjustments after the active treatment is over and after all of the appliances have been removed from the mouth. No variance so great exists in dental arches of different humans that this procedure may not be safely followed, provided the teeth have been moved so that their occlusal inclined planes are definitely within the proper influence of the normal antagonist. The principles of normal occlusion are the same the world over, although there are racial characteristics for general arch form and position of the denture in the cranium. These must be recognized when present in plotting the desired arch both in form and cranial relationship. Fortunately, the percentage of such cases in the United States is small, and therefore the Hawley charts have proved adequate in an experience of some twenty years. Other methods have been tried in the meantime. We have no quarrel with those who prefer them. We feel strongly, however, that simplicity, when adequate, is preferable. In the use of the Hawley charts, we have inclined to the next larger size arch form when measurements of the anterior teeth vary from the figures in the chart. We have felt it better to slightly overwiden the bucal segments knowing that if too wide, function would soon reduce them to their proper width when appliances are removed.

Having made diagnosis, classification, case analysis, and arch predetermination, the next step will be the planning of the *appliance therapy*. Here there will be considerable variation of opinion. It is fortunate, and bespeaks genuine progress, that the rabid disciples of a so-called method or system of appliances are fast thinning out. In the immediate past, the variance in different localities, and between different schools and groups, was so extreme that it was sometimes difficult to know to whom to refer patients either for emergency or continuation treatment. The outspoken criticism of some specialists, when being consulted by referred patients, impressed one as being nothing short of disgraceful professional conduct. The insistence on replacing all appliances in the mouth with those of their own making was, we believe, mostly uncalled for. It usually resulted in engendering hard feeling between specialists and also placed the patient in a serious quandary that not infrequently resulted in lowering confidence in all orthodontists. This day we trust has passed. Orthodontists are realizing that, if the scientific fundamentals are understood, satisfactory results may be obtained in any one of several types of appliance. It is, indeed, being realized that it is the ability of the specialist to properly manipulate the appliance selected that is the essential factor in success, and that satisfactory results are being produced by greatly varying appliances in the hands of different orthodontists. What we shall advocate at this time will be offered as the result of personal experience with mechanisms embracing practically all of the principles that have been offered since the advent of the exclusive specialist in orthodontics. Every one has some individual merit provided it is fully understood and properly handled. The two outstanding qualities that we have sought

are (a) efficiency and (b) simplicity. With these in mind, we have never been able to confine our appliances to any one type. We have, however, endeavored to keep them at a very minimum.

There are seven directions in which a tooth can be moved in treatment, namely:

1. Labial or buccal,
2. Lingual,
3. Mesial,
4. Distal,
5. Elongation,
6. Depression,
7. Rotation.

The first four movements may require that the tooth be either tipped or moved bodily. Combinations of movement are frequently necessary in a single tooth. Selection of appliance will be made according to the movements desired.

Serious and persistent efforts have been made by a number of orthodontists during the past thirty years to devise an appliance that would be universal in its application. We have in turn tried out, clinically, all types involving an individual principle and have never been able to adopt any one so far offered as being best suited for all classes of treatment. We believe in using the simplest, least mouth-cluttering, and least conspicuous mechanism that will do the work called for in a given stage of treatment. If later, in the development of the arch, a more complicated mechanism is indicated, we have no hesitancy in changing to one of that type. This procedure offers the following advantages:

1. Use of the smallest and neatest mechanisms as much as indicated.
2. Least interference with
   (a) mouth hygiene
   (b) mastication
   (c) speech
   (d) tissue safety and comfort.
3. Inconspicuousness, which is an important consideration with a goodly number of patients.

The attainment of these qualities may, we feel, best be brought about by appliances which are classed as follows:

1. The lingual arch (after Mershon).
2. The plain labial arch.
3. The edgewise arch and tie brack mechanism (after Angle and his pupils).
4. The removable bite and retention plates (modified Hawley type).

Before going into detail regarding each of the types of appliances, we desire to reiterate, with strongest emphasis, our present attitude concerning the application of arch predetermination and the charting of a so-called "ideal arch" form. Not only should this be done, but it should be continually referred to in making progressive adjustments and persistently followed throughout treatment. In thus working toward a definite end result, the maximum of efficiency in every type of appliance may be more nearly realized. This applies as definitely

to the lingual arch as it does to the plain labial and the edgewise. Since using the tie bracket mechanism, we have more and more applied this principle in lingual arch adjustments, and with increasing conviction of its value.

1. *The Lingual Arch.*—The general technique of the originator of the form now used, John V. Mershon, is followed in all essentials. We advocate, with him, the plain line arch without loops. We prefer to move half-round posts in reducing arch size and to solder in a new cuspid-to-cuspid section when enlargement of the arch is advisable. The main arch receives more frequent adjustment than formerly, the more closely to follow the gains made by the auxiliary springs. It is adjusted more frequently than formerly, working gradually toward the "ideal arch" form.

We feel strongly that a so-called ideal arch form should be worked out for the lingual aspects of the teeth, as a better guide than to compare it with the "ideal" labial form. We prefer this arch for the following tooth movements:

(a) The broadening of the buccal segments and general stimulation of arch growth. For this it has in our hands proved to be the appliance par excellence. Since the large percentage of cases require arch enlargement in some degree it becomes an important part of treatment in the vast majority of our cases.

(b) Many mesial and distal movements can be nicely effected.

(c) Rotation of premolars can often be brought about without the use of bands on these teeth.

(d) Lingual movement can frequently be made especially as the teeth are erupting.

While other directional movements are possible, we have found them easier to make with another type of mechanism. We prefer to use the lingual arch whenever possible for the following reasons:

(a) The gentle continuous pressure in the outward or natural growth direction is, in our hands, the most welcome and most nearly physiologic that we have experienced.

(b) Mouth hygiene is comparatively easily maintained.

(c) Few bands on the teeth are required.

(d) Its inconspicuousness is most acceptable to the patient.

We wish to say that most everyone who works studiously with any type of appliance is inclined to find little variations in technique to suggest themselves. One's personal preference for these "hickeys" or "jim cracks," as Dr. Angle liked to call them, does not, however, alter the basic principles of the particular type of appliance or entitle the "modifier" to credit for more than a minor suggestion. Oftentimes they are not improvements and find little acceptance by others.

2. *The Plain Labial Arch.*—Preference for this type is given for:

(a) Use when elastics are to be worn.

(b) The alignment of the anterior segment of the arches.

All seven tooth movements can be brought about by the plain labial arch. Banding of individual teeth is much more called for than with the lingual appliance. It is preferred when only simple changes are to be made. It is less

hygienic and endangers hard and soft tooth tissues more than does the lingual arch. Bodily tooth movement is not so easily produced or controlled as by the third method which we advocate.

The two types so far outlined will serve well, and very satisfactory results can be brought about in the simpler and less exacting cases. Fortunately these form a goodly percentage of practice and therefore a more exacting and complicated treatment need not be used. Then there are quite a number of practitioners who feel it better not to strive too assiduously for near perfection in tooth positioning, feeling that too much movement is not a good procedure for the health and longevity of the teeth. We respect their view and accord them the right to so practice. Perhaps after all they are correct and as experience marches on we shall in the years to come have to agree with them. At the present time, after over twenty years of use more or less persistently of three types of appliances that facilitate a more definite and controlled movement of teeth in all seven directions, both singly and in groups, we must advocate the use of a mechanism with which such changes can be realized in those treatments requiring it. Without this we would be compelled to dismiss cases as completed without having accomplished all that we feel could be done for them. For this reason we are compelled to advocate the use of the third type even though it is more complicated, less hygienic, and more unsightly. Therefore, to those specialists in orthodontics who aspire to the rendering of the highest type of service of which our specialty is so far capable, we are constrained to urge with utmost sincerity a careful inquiry into the possibilities for good or for harm of the third type.

3. *The Edgewise or Tie Bracket Mechanism.*—

In our experience we have in turn used:

(a) The pin and tube,

(b) The ribbon arch,

(c) The edgewise mechanism as developed by Dr. Angle and his pupils, prominent among whom is our fellow member, Dr. Strang.

If we may be permitted an expression of opinion, we should like to say that it is less exacting and complicated than the pin and tube, and slightly more so than the ribbon arch technique. It has greater inherent potentialities. By it all tooth movements can be produced, including the distal positioning of the posterior teeth. It permits decidedly the shortening in length of time of appliance wearing. By it a general truing of teeth into the occlusal plane is made possible to a degree thought impossible just a few years ago. The technique, as now advocated, embraces the use of finer arches, producing a much gentler pressure, which do not fit snugly into the brackets, thus permitting considerable individual shifting of the roots as the teeth are being moved. To allow this a round arch of only 0.0218 diameter and a small rectangular arch of 0.0218 by 0.025 are used in a bracket slot measuring 0.022 by 0.028. Thus less fixity is used than formerly. The regular edgewise arch of 0.022 by 0.028 is being more or less reserved until general alignments have been attained by the use of the smaller arches.

To those who are hesitant about the adoption of this technique, may I strongly urge that they examine the patients of those who have used this appliance long enough to safely master the basic principles and of those who have applied it in practice long enough to form an opinion of its merits. We shall rest content with the decision reached by each one of you.

And may I further be permitted to offer you an earnest bit of advice? If you decide to take up the use of this appliance, get your instruction from one who has mastered the fundamentals as worked out by the men who produced it. Above all, shun modifications of every kind until after you have mastered the principles as taught by the originators. Approach its use with reverence, for like all things in life that are potent for good when properly used, they are also potent for harm, when abused or improperly applied. To those who will master it, I predict an experience of utmost satisfaction in the improved quality of results in those difficult cases in which they have heretofore not been quite able to attain that final desired nicety that would truly satisfy them. This can be attained in an almost startlingly short time by those who persist until they have mastered it. But remember that we advocate its use only for those cases in which it is indicated and for that part of the treatment that cannot be done by a simpler appliance. As each one progresses in its use, the extent to which it is preferred will be automatically worked out to suit the individual. I believe, however, that the tendency will be to apply it to an increasing percentage of cases as each one becomes accustomed to its use. But at first approach it with awe, for harm is possible if it is improperly used.

The fourth type of appliance, namely, the *removable bite plate and retainer,* as first suggested to us by our late fellow member, Charles W. Hawley, is more or less familiar to all. I shall here simply reiterate my former declaration of its essential value in our practice. We feel that we could not obtain and maintain the good results to which we are accustomed without its use.

At this time we feel strongly that principles of treatment are called for. We desire to re-emphasize that orthodontics treats of development and growth of the body as a whole, as especially related to its influence upon the face, jaws and teeth, and that appliance therapy is only one of seven divisions of treatment and should be used only as a last resort.

THE LYMPHOID TISSUE PROBLEM IN THE UPPER RESPIRATORY TRACT

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THE early recognition of pharyngeal lymphoid tissue and tonsils as etiological factors in malocclusion and in the abnormal development of the environmental tissue and adjacent parts and the indications and contraindications for surgical interference, should be of paramount interest to the orthodontist as well as to the rhinologist. I take it for granted that the orthodontists are pretty well agreed that mechanical methods alone are not sufficient for the proper guidance of the developing teeth and jaws, and for permanent maintenance thereafter. There are many other factors which must be considered as having some relationship to the problem of the causation of maldevelopment. These we can only mention here in passing on to the subject under discussion. The role played by endocrine glands, by general malnutrition as in rickets, by allergy, and by heredity must never be omitted from the study of a patient who needs orthodontic attention.

The subject assigned to me is a twofold one: The first is to discuss the relationship of the lymphoid tissue of the upper respiratory tract to the development of malocclusion; and the second, the effect of this tissue on the adjacent structures, the sinuses and the ears, and what to do about it. While these two topics may appear distinct from each other, they do have, on closer examination, a definite interrelationship. For example, in a patient whose respiration through the nose or pharynx is impeded sufficiently to cause more or less continuous blockage over a period of time, we may expect a disturbance in general nutrition. This condition is due to restlessness at night, poor appetite, perverted metabolism from insufficient oxygenation, all of which factors must inevitably affect the growth of all the body structures, particularly those adjacent to the nose and pharynx, i.e., the jaws and teeth as well as the sinuses and ear passages.

To be specific, we want to know whether the adenoid or pharyngeal tonsils and the other lymphoid masses can cause such changes in the development of the jaws and teeth as will lead to the various forms of malocclusion. For many years the prevailing opinion was that the adenoids were the main cause of palatal and dental deformity. In 1908, however, McKenzie[1] studied the history of 222 children with adenoids. He concluded that there was no interference with the jaws and palate. Layton[2] in 1914 felt the same way. Then Brash in 1929, after an extensive research, stated that, "It is still to be proved that there is any significant correlation between the presence of adenoids and the incidence of deformity of the jaw and palate." He suggested heredity as the most likely factor.

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We have observed, in cases of continuous obstruction to nasal breathing, a lack of development of the paranasal sinuses, often marked by an apparent prominence of the nose. This is due mainly to the underdevelopment of the maxillary prominences with a concomitant small maxillary sinus, as well as to incomplete development of the other sinuses. These people also have excessive overriding of the upper incisors, a high arched palate, and a contracted alveolar process.

Wasson[3] of the Child Research Clinic of Denver and Bowen and Balyeat[4] of Oklahoma City have noted that the sinuses are poorly developed in cases of chronic nasal obstruction, particularly those due to nasal allergy. In their opinion mouth breathing in itself does not cause dental and palatal deformities. In their study of facial and dental deformities due to perennial nasal allergy in childhood, Bowen and Balyeat state, "It is generally believed that to some extent the teeth owe their position in the dental arch to the balanced action of the pressure of the lips, cheek and tongue. In the child with chronic nasal allergy, this balanced action is gone. Mouth breathing over a period of years allows a pushing in of the gums, during the growing age, by the facial muscles, of which the buccinator is the most important. The muscle action would have a tendency to produce a narrowing of the arch, and this in turn would tend to produce excessive overriding upper incisors. The balanced action and the muscle pressure just mentioned are likewise true of children with adenoids who suffer from mouth breathing, but in the adenoid children, the normally developed paranasal sinuses push their way downward and prevent deformity of the arch. In other words, the normal development of the paranasal sinuses which occurs in children suffering from adenoids has a tendency to prevent dental and palate deformity in spite of the abnormal action of the tongue, lips, and facial muscles. On the other hand, in the nasal allergy child who is a mouth breather, the diminutive sinuses and the facial deformity will allow the abnormal tongue, lip and facial muscle action to produce the V-shaped arch and the excessive overriding upper incisors which correspond to the 'textbook' description of a mouth-breather's palate."

Some of their conclusions may be of interest. "Excessive overriding upper incisors and V-shaped palate occur in about five per cent of the child population. The occurrence of the deformity is four or five times greater in children who suffer from chronic nasal allergy.

"The two most probable causes of the palate-dental deformity are: (a) inheritance; (b) some type of pathology in infants and children that would interfere with the normal development of the paranasal sinuses.

"It is still to be proved that there is any significant correlation between the presence of adenoids and the incidence of the dental-palate deformity."

Balyeat and Bowen disagree with Duke,[5] who, in describing facial deformity in allergy, states, "This type of face differs from that caused by adenoids in the absence of the pinched appearance of the nose, in the lack of prominence of the upper incisor teeth and in the absence of the abnormal mouth and abnormal lower jaw."

We have here, then, the opinions of allergists as well as pediatricians whose statements are based on clinical observations, and who as you see vary in

their conclusions. Because clinical observations may be contradictory in so many ways, depending on the acuteness of the observer and the type of patients, there is bound to be a lack of correlation in the findings between one investigator and another.

But let us see what a laboratory investigation reveals. In this type of study, an attempt is made to use measures of precision, without regard to preconceived ideas. In this I have followed rather carefully the work of the late T. Wingate Todd. In his paper, which I had the honor to discuss, before the Thirty-Third Annual Meeting of the American Society of Orthodontists in New York City on April 30, 1935, he stated, "Everyone knows, of course, that faces differ, and most of us are content to assume that the differences are largely due to the hereditary tendencies implicit in the genes. But as the face, like the rest of the body, is a plastic thing and since the adult contours are the end-result of a growth pattern which, in the course of its progress, may be expedited, interrupted, retarded, warped or inhibited by misadventures of health and by vagaries in the interplay of those organically originated influences by which the pattern is promoted, it is evident that environment, external and more particularly internal, must contribute in no small manner to the final result." This statement broadly summarizes the consensus of all scientific investigators in this field.

Todd was able to follow the natural history of the adenoid mass in childhood, by precise standardized roentgenograms. He found in healthy children that at twelve months it is sufficiently developed to show a shadow on the film, how it increases in size to three years, its stationary condition until adolescence (except in those children in whom shrinkage takes place rapidly from eighteen months onward, and this is rare), and finally its gradual recession in size after adolescence. He made some significant statements, which I take the liberty of repeating. "Now if the respiratory passage through the nasopharynx be choked by an adenoid mass, the only method of opening up a channel is the depression of the soft palate, and this is most readily brought about, as can be shown in roentgenograms, by thumb-sucking. I do not mean that adenoids are always the sole cause of mouth habits, but it is clear that the presence of mouth habits should direct one's attention to the nasopharynx."

After the third year, in the average case, the nasopharynx is sufficiently large to permit nasal breathing in spite of the adenoid, but because of frequent colds, the nasal mucosa as well as the adenoid may become swollen, thus continuing the obstruction to breathing. This is in addition to the effect on the eustachian tube and ears.

The effect of allergy on the adenoid is definite. On x-ray examination the adenoid shows marked fluctuation in size due to congestion and edema, precisely as does the nasal mucosa. When the child's health is at its best, both in regard to body weight and the season of the year, the adenoid may not show at all, and therefore erroneous conclusions may be drawn unless the history is carefully gone into. In allergic cases the adenoids are very apt to recur after removal.

Rosenberger, working in Todd's laboratory at Western Reserve University, studied the records of the growth and development of the nasorespiratory area in a large number of children. The roentgenograms were accurately made with the aid of the Broadbent-Bolton cephalometer. He found that "the widening

of the nasopharynx is a growth phenomenon achieved by two growth changes: Expansion of the wings of the sphenoid and the forward drift of the palate. It follows then that failure of anterior-posterior development of the upper face results in a relative constriction of the nasopharynx so that a pharyngeal tonsil, at the height of its lymphoid growth, may become an impediment to breathing." The nasorespiratory area moves forward with growth in direct proportion to the forward growth of the brain and the anterior cranial fossa. The forward extension of the upper face is also in proportion to the development of the sphenoid and ethmoid. "The floor of the nasal area does not grow as fast as the roof. The hard palate moves forward with the general facial drift, even while it is increasing in length. This has an important bearing on the opening up of the nasopharynx. Todd and Krogman have demonstrated marked anterior-posterior growth in body and great wing of the sphenoid. This, together with the general basilar growth manifest in the basocranial axis of Huxley, results in the gradual opening of the nasopharynx which keeps pace with forward sphenoidal growth."

After the third year, any condition which predisposes to retarded growth in any of the dimensions will affect all the dimensions. Up to that time, any disharmonious growth is usually confined to one dimension. The significance of this fact in the determination of the proper time for removal of the adenoids is self-evident and will be brought out later.

To summarize the effect of adenoid tissue on maldevelopment of the jaws, we can say with certainty that the mere presence of adenoids does not cause deformity, but that the mouth habits which sometimes result from large adenoids may be the essential factor. The effect on the general health from improper breathing and frequent colds show some deleterious results on all tissues and especially those of the face. The improper use or lack of use of the essential face muscles and tongue, which results from thumb-sucking or mouth breathing, has a definite effect on the alveolar processes. The work of your honored president, Doctor Rogers,[6] on myofunctional therapy, justifies this statement. And Waugh[7] concludes his latest contribution of his research on the Eskimos with this statement: "From this study of the Eskimo dentition, we have come to believe that the size of the body of the jaw is determined largely by heredity, and the form, quality and size of the alveolar process is primarily the result of function. As it is the alveolar process in which the orthodontist brings about the greatest changes during treatment, the foregoing interpretation, if correct, must be of utmost importance in etiology, diagnosis, classification and treatment of malocclusion." With this I am in absolute accord.

In the second part of this paper I shall discuss the effects of lymphoid tissue masses on the ears, nose, and sinuses, and the indications and contraindications for surgical interference.

Let us first review the development and physiology of Waldeyer's ring, which, as you know, includes all the lymphoid tissue masses in the upper respiratory region. These are the pharyngeal tonsil or adenoid, the palatine or faucial or true tonsil, the lingual tonsil, and the groups along the posterior pharyngeal wall, especially in the lateral recess, or Fossa of Rosenmüller.

The so-called germ centers or secondary follicles are not seen in either the palatine or the pharyngeal tonsil until after birth, that is, after exposure to the

irritations of the outside world. These two masses differ somewhat from each other in the type of epithelium covering the surface and crypt walls. The epithelium of the adenoid crypts has cilia, and, furthermore, the mucous glands open directly into the lumen of the crypts. In the palatine tonsil cilia are rare and the mucous glands, as a rule, are few and open into the periphery of the lymphoid mass, and to a lesser extent into the crypts. Other glands are found deep in the peritonsillar fascia, even extending into the muscle, with lymphoid tissue growing along with them. It is these extensions which may give rise to peritonsillar abscess or recurrence of tonsil tissue after apparently complete removal.

The germ centers or secondary follicles show a reaction to invasion, according to Hellman and Berggren.[10] Heiberg[11] claims that lymphocytes are destroyed by these lymphoid masses and not produced in them. Waldapfel and Grossman found polymorphonuclear leucocytes with intracellular cocci in the germ centers during acute tonsillitis. They are in agreement with Hellman and Berggren that the lymphatic tissue acts as a protection against invading organisms.

Yoffey[12] states that "it is quite likely that the lymphocytes are concerned with the active growth processes of childhood and that the lymphoid tissues act as a storehouse of primitive wandering mesenchyme cells to supply the various tissues as they are needed."

So far no proof has been submitted to show that the removal of the tonsils and adenoids is in any way deleterious. In fact those who claim that the lymphoid tissue has a specific function advise operation when the tonsils are diseased because other organs with analogous functions compensate for their absence. Peller,[8] from studies of growth statistics, feels that the lymphoid tissues are an inhibiting factor in growth, because the great majority of children grow and develop faster than the average after tonsil and adenoid operations.

The tonsils and adenoids as well as the lingual tonsil and the group of smaller masses of lymphoid tissue on the posterior pharyngeal wall all eventually drain into the retropharyngeal, the superior deep cervical, and the inferior deep cervical nodes. These nodes drain into the general circulation by way of the right lymphatic duct and the thoracic duct on the left. The drainage system begins as a plexus of small closed lymphatic capillaries or spaces, completely surrounding all tissue cells. These capillaries form progressively larger vessels which in turn empty into the lymph nodes.

The tonsils are not true lymph nodes because they have no afferent vessels.

Very little attention has been paid to the lymphoid follicles on the pharyngeal wall, especially in the so-called lateral columns, as secondary foci of infection. Most infections in the adenoids, tonsils, teeth, and sinuses affect these follicles which continue to disseminate deleterious material even after the original focus has been removed. A very common result of infection in the nasopharynx is enlargement of the lingual tonsil which may cause trouble in two ways: first, the large mass presses on the epiglottis giving a sensation of some foreign body and causing a cough; second, these lymphoid tissues may be the cause of low grade infections in other parts of the body.

What happens histologically when the tonsils become diseased? The various components of the tonsil, the epithelium, the lymphoid tissue or parenchyma, and the environment or tonsillar bed with its fascia, muscle, and mucous glands are all involved. The crypts with their lining of epithelium show the most marked effects. The contents generally are composed of mucus, food, lymphocytes, polymorphonuclear leucocytes, bacteria, fungi, and exfoliated epithelia. The crypt may have become plugged and distended with debris from various degenerative changes in the epithelia and the formation of cholesterol crystals. The epithelium is frequently thickened and contains vesicles filled with polymorphonuclear leucocytes. These vesicles often rupture thus providing an entrance for bacteria which produce ulceration. These ulcers in the epithelium are very common and may either heal or extend into the lymphoid tissue. If the ulcers heal, adhesions may form, resulting in the blocking of the crypts and retention of the enclosed debris. Or the crypts are replaced by granulation tissue and later by fibrous tissue with abscesses extending into the parenchyma.

In cases where the crypts extend down to the peritonsillar fascia, the inflammation may spread directly to this region and result in a peritonsillar abscess or quinsy.

With repeated attacks of inflammation, there is an increase in the amount of fibrous tissue both of the capsule or peritonsillar fascia and of the septa which invade or separate the lymphoid follicles. Of greater importance is the invasion of the underlying muscle by this excessive fibrosis, which causes various fixations of the tonsil or its parts, with obliteration of blood vessels and the formation of abscesses, constriction of the crypts, and blockage of the mucous glands.

It is noteworthy that, in general, patients with local complaints and physical signs of tonsillar disease have relatively fewer pathologic changes in their tonsils than those with systemic disease or changes elsewhere in the body attributable to the tonsil.

What effect does the presence of enlarged or infected lymphoid tissue have on the nasal chambers and environs? In order to intelligently discuss this problem, we must review briefly some of the physiology of the nose and paranasal sinuses. The main functions of the mucosa lining these structures are to warm, to cleanse, and to moisten the incoming air so that when it gets to the alveoli of the lungs it is properly prepared for absorption, without causing irritation to the lung tissues. The nasal passages are covered with a mucosa whose outer layer is composed of ciliated epithelium. These cilia are in constant motion, the direction being toward the nasopharynx. They can function only when they are engulfed in a film of mucus of such viscosity as will permit the cilia to move freely, not too slowly and not too quickly. In other words, any change in the viscosity may be sufficient to impair the function of these cilia which are moving the film of mucus. Most foreign substances which have eluded the mucus coated vibrissae in the nasal entrance or vestibule are enmeshed in this film. When the cilia cease to function, infection invariably follows.

Physiologists tell us that the nasal mucosa gives up to the air passing through the nose, about 1000 mil. or a liter of water in twenty-four hours. This air also absorbs from the abundant blood supply in the mucosa enough warmth to give the air a temperature close to that of the body itself.

This it is able to do because of the enormous venus channels or erectile tissue in the inferior and middle turbinates. The filling and emptying of this cavernous tissue are finely regulated by vasomotor nerves to meet the usual variations in the outside temperature.

From this short summary of the physiology one begins to realize what a wonderful air-conditioner our nose may be, if everything is normal. Now what happens if there is an adenoid mass closing up the posterior nares or choana? First and foremost the air cannot get through; therefore the child must breathe through the mouth which is not physiologically equipped to properly prepare the air for passage to, and absorption by, the lungs. This results in irritations in the mouth, pharynx, larynx, and lungs, producing various degrees of inflammatory reactions in all parts of the respiratory tract.

The effects on the nose, sinuses, and ears need special emphasis, because the symptoms are usually slight and in most cases the course is so chronic and insidious that the patient, the parents, and the attending physician pay little attention to them. As a rule only when there is pain does the rhinologist see these patients and by that time the condition has already done much damage.

I need not describe in detail the signs and symptoms produced by the adenoids, especially if large. These I have retold to you on several occasions, both at your local meetings and also in April, 1937, at the Thirty-Fifth Annual Meeting of the American Society of Orthodontists in Chicago. I must, however, emphasize a few facts, all the more to impress them in your minds.

A child who does not breathe well through his nose usually has either sinusitis, allergy, or adenoids. Rarely there may be other causes. He may have one; he may have all three. The presence of adenoids will aggravate the sinusitis or allergy, or may be in itself the cause of the sinusitis. And, by the way, we must remember that every head cold involves the nose, the sinuses, and the pharynx, and may extend into the eustachian tube and middle ear. Furthermore, the adenoid in an allergic child is always enlarged by the edema which is the usual manifestation of allergy in mucous membranes.

A child who has frequent colds in either the nose or throat may be harboring an enlarged adenoid or diseased tonsils. Which came first, the cold or the adenoid, is immaterial. We can get rid of the adenoid and in so doing either prevent the colds or reduce their severity.

A child who has attacks of cervical adenitis, so-called glandular fever, or swollen glands has an infection higher up which is feeding into the lymph nodes in the neck. To relieve this condition, we must seek the cause, and it invariably is found in the nose or pharynx.

A child who is constantly coughing, especially one who has frequent colds, may be doing so because of the presence of a postnasal drip which acts on the cough reflex by direct irritation of the mucopus. This cough may also be due to stimulation of the vagus nerve in the pharyngeal plexus by the unprepared air. The irritated adenoid is swollen and secretes mucus in abundance, which adds to the trouble.

And finally, a child who has frequent attacks of earache, discharge from the ears, or any loss of hearing, is most likely suffering from a respiratory lymphoid tissue involvement. I shall have more to say about the hearing loss later.

On examination, we may find the following signs which in themselves should indicate the need for a tonsillectomy and adenoidectomy. Large protruding or pedunculated tonsils (small buried tonsils may be almost as bad); open crypts from which liquid pus may be expressed which, if examined under the microscope, will show a preponderance of leucocytes; enlarged follicles on the posterior pharyngeal wall, and the adenoid possibly showing behind the palate on gagging; evidence of scarring in the tonsils of older children; excessive size of the plica supratonsillaris and of the plica pretonsillaris or triangularis; red to purplish discoloration of the anterior pillars (some authorities claim that if the redness is sharply delimited it signifies a local involvement, while if it is diffuse there is a systemic involvement and the results from operation are not so good.

It must be apparent to you from your own experiences and those of your patients that tonsillectomy and adenoidectomy will not give 100 per cent relief in all cases. There are certain factors that influence the results and a review of these may help to clarify in your minds just what can be expected.

The chief complaints in children for which tonsillectomy and adenoidectomy are advised are (1) cervical adenitis, either frequently recurring, or constant enlargement of the cervical lymph nodes, (2) pharyngitis or frequent sore throats, (3) otitis media, catarrhal, or suppurative with either recurring or prolonged discharge, (4) mouth breathing, (5) cough, when definitely not of pulmonary origin, and (6) sinusitis or head colds.

The results obtained from operation in these complaints vary. The best results can be expected in cervical adenitis, pharyngitis, and otitis media. In decreasing proportion come improvement from mouth breathing, cough, and head colds.

The latest statistical study of this problem was made in the Sprague Memorial Institute and the Children's Memorial Hospital in Chicago by J. M. Epstein,[17] now of El Paso, Texas. Five hundred and forty children whose ages ranged from 2 to 13 years were carefully followed for two years. The percentage of favorable results varied from 92 per cent in cases of adenitis, followed closely by pharyngitis and otitis, through 79 per cent in mouth breathing, to 70 per cent in cases of frequent head colds.

It should be recalled that because many of the children had several complaints, 16 per cent obtained only slight or no improvement. One must never forget that there may be many factors involved in the causation of symptoms, in the degree of their severity, and in their relief. How many of these children were allergic was not ascertained.

As a rule, children in the age group from 6 to 13 years get the best results. In younger children (under 6), mouth breathing persists in 26 per cent of cases, whereas in the older groups it averages 6 per cent.

It is interesting to note that many children with no or only slight narrowing of the nasopharyngeal spaces are mouth breathers and yet after operation, many will be cured of this habit. It seems probable that the cause was more nasal than pharyngeal, but the removal of the tonsils and adenoids decreased the frequency and severity of the nasal infections which kept the turbinates and the

septal mucosa in a swollen state. Habit and the shape of the jaws prolong the period of mouth breathing, even after all obstructions are removed. Habit is particularly blameworthy.

Practically all children gain weight after a tonsillectomy and adenoidectomy, the rate being even greater than the usual average gain for their age.

To estimate the value of tonsillectomies and adenoidectomies in children we must make a careful study of the past history. This is more important than the examination. Although large tonsils and red pillars may be taken as the most valuable indications for operations they are not always as reliable a sign of infection as frequent attacks of tonsillitis and pharyngeal adenitis.

As for systemic involvement, such as rheumatism, kidney infections, asthma, the proper attitude to take as far as indications for operation are concerned, is one of guarded prognosis. The history and examination are invaluable and if all other foci are eliminated, it is the best gamble for the child's future welfare to remove the tonsils and adenoids because histologic examination reveals that practically all tonsils show evidence of some degree of infection, and the focus may well be here.

In summing up the results from operation, we generally forget to take into consideration how skillfully it was performed. If a piece of tonsil or adenoid is overlooked, that piece still continues to act as a focus. Of course it is not sufficient to cause obstruction, but it may undergo hypertrophy. Eventually the adenoid may become large enough to again give symptoms. This is particularly true in certain individuals, especially sufferers from allergy.

On histologic examination both large tonsils and buried ones are found to be equally infected. Cryptic tonsils always have more or less caseous material in them, and invariably there are abscesses in the crypts.

The majority of children begin to have marked symptoms at three years of age. They usually appear after a cold, become more frequent, and increasingly more difficult to clear up.

From the accumulated experiences of thousands of operators, in literally millions of cases, there are very few contraindications. The males in hemophiliac families are best left alone. After any acute illness a period of four weeks should intervene before operation, so that the patient may be in a positive defensive phase. It is well known that antibody formation is retarded for about three weeks after an acute infection, and to operate during this negative phase increases immensely the danger of infection and hemorrhage. Very rarely, however, it may become necessary to remove the adenoids in infants while there is some acute involvement of the middle ear and mastoid. This procedure often permits rapid resolution of the infection. Under 2 years of age, except as just stated, operation is usually contraindicated. Between the ages of 2 and 3, if one can demonstrate a retardation of growth in any of the dimensions as shown by Rosenberger, operation is advisable. Children past 3 years who do not have frequent or severe colds, or allergy, will not, as a rule, need to have an adenoidectomy. With the continuous growth of the pharynx and the stationary condition of the adenoid, there will be no interference with breathing and unless symptoms or signs of focal infection develop there is no indication for surgery. It seems

that the best age is from 4 to 6, when the infected adenoid is most likely causing obstruction. Experience has shown that the results after 6 years of age get progressively poorer.

The question often comes up, "When is the best time of the year to operate?" We make it a rule except in emergency not to do any surgery on children during epidemics or when there is great prevalence of upper respiratory infections. Very hot weather is enervating especially in the very young. Cold weather does not seem to retard normal healing.

Lastly, but most important—and I am not trying to be facetious—the greatest contraindication to this so common operation is the operator. The vast majority of tonsillectomies and adenoidectomies are being done by men who are poorly qualified to do them. The general practitioner as well as the general surgeon knows little about the finer anatomy, pathology, and surgery of this region and is apt to take out too much or too little. This unfortunately also holds true with many poorly trained rhinologists. Through my observations during twenty-six years of practice, I have come to believe that there is more poor work done in this field than in any other part of the body. If too much tissue is removed, i.e., if muscle is cut out, there will be scarring and puckering, with possible inclusion of tonsil tissue in the scar, making it a greater focus of infection than it was previously. This may also affect the voice and interfere with swallowing. If some tissue is left, it still remains diseased to continue trouble for the patient.

The most important part of my discussion of the deleterious effect of adenoids, I have reserved for my closing paragraphs: the causation of deafness. Those of us who see young adults just beginning their life's work, retarded, thwarted, and finally discouraged because deafness prevents them from getting positions for which they have been trained or to which they aspire, realize the enormous responsibility which we must shoulder. At least 50 per cent of these people have a form of deafness which is preventable and which begins to develop during their early years when the lymphoid tissue of the pharynx is subject to frequent infection. It has been found that the lymphoid tissue reacts to infection not only by increasing in size but by spreading to areas of mucous membrane normally free from it.

Children with deafness for the high tones, which did not improve after adenoidectomy, were found, on more careful examination, to have developed new lymphoid follicles in addition to an overgrowth of lymphoid tissue in and around the pharyngeal orifice of the eustachian tube causing its partial closure. This condition is the result of frequent colds. This form of reaction gradually disappears after puberty, but the damage to hearing has already been done.

As shown by Crowe and Baylor[18] of Johns Hopkins, the earliest symptom of such partial obstruction in children from 5 to 10 years of age is impaired hearing for the tones between 10,000 and 16,000 double vibrations. Ordinary speech ranges from 250 to 3000 double vibrations, and until the deafness progresses from the high tones to these lower tones, we are not aware that for several years deafness has been approaching. Other symptoms are recurring attacks of otitis media and long-continued aural discharge.

The treatment in these cases requires not only meticulous surgery but also subsequent radiation by radium or high voltage roentgen rays. Radiation does not destroy the follicles but arrests them during the period when they grow most actively.

To summarize the second part of our subject, it is obvious from the data presented that any lymphoid or tonsil tissue when diseased should be removed. Fifty per cent of adult deafness can, in this way, be prevented. The results will depend mainly on these factors: the thoroughness of the operation and the relation of any contributing conditions which we cannot eliminate. The percentage of good results, varying from 70 to 92, can be bettered by closer cooperation between the family doctor, the orthodontist, and the rhinologist.

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Special Article

BROADCASTING is becoming an important means of conveying public health messages, in medical practice as well as dentistry.

The AMERICAN JOURNAL OF ORTHODONTICS & ORAL SURGERY is pleased to be able to publish herewith a broadcast on the subject of orthodontics for the benefit of the general public, by Dr. J. A. Salzmann over Station WNYC, under the auspices of the New York Tuberculosis Health Association.

The text of the broadcast follows:

Editor.

A TOOTH IS BORN

J. A. SALZMANN, D.D.S., F.A.P.H.A., NEW YORK, N. Y.

I should like to take you today on a little exploring trip. We shall begin by following one of a group of men coming up from the subway at one of the more outlying districts of New York City. Let us follow this man, call him John Smith for convenience, to his home. Smith had no more than flung his hat into the wardrobe closet when, "Guess what?" greeted his ears.

"Yeah, what?" inquired John, just beginning to recover his breath since emerging from the crowded subway, little suspecting what was coming.

"Why, the baby has a new tooth," Mrs. Smith proudly informed him.

"Not really," said John and made straight for the baby's crib.

"Well, I'll be; so he has; yes sir, and I think there's another one coming. Say, do you know, Mary, that boy is getting there. First thing you know he'll be calling me 'Daddy,'" came from Mr. Smith all in one breath. There was great excitement in the Smith household that evening.

And so, a tooth was born and started on its career. If teeth could tell their own stories, they would indeed unfold some strange tales, anywhere from the romances that sometimes follow a beautiful, bright smile to the more serious business of establishing the identity of criminals and of bodies mutilated beyond recognition.

Let us return and look again into the Smith household three years later and see how the baby with the tooth that caused so much excitement on its arrival is getting along. The baby is now 3½ years of age. The first tooth which has since been followed by many others has long been forgotten. The Smiths are now all excited about the cute words the baby has been saying of late. The baby now walks and talks. He is becoming somewhat of a problem, getting into everything, as babies will, and refusing to eat his vegetables as babies are known to do.

John and Mary Smith had both been to the dentist in the past year for much needed dental work. But, as far as the baby was concerned, he was re-

garded as entirely too young to be taken to the dentist. But was he? Statistics concerning the teeth of young children have time and again shown that two years is not at all too early for the baby's first visit to the dentist.

At four years of age the Smith baby's dental needs could no longer be ignored; in fact, Junior would not stand for it. A thumping toothache had disturbed the household throughout the night. That first tooth which had attracted so much attention and the many other teeth that had since come into Junior's mouth had to be reckoned with.

Mr. and Mrs. Smith had been comparing notes on their dental experiences and making themselves out veritable martyrs. After all, what is the sense of going to a dentist if one cannot capitalize on it. The baby, while not comprehending all that had been said in his presence, nevertheless understood sufficiently to conclude that the dentist was someone to be feared, and he lost no time in showing his decided dislike of Doctor Brown.

The dentist proceeded to use all of his knowledge of child psychology in quieting Junior. The end result of this visit, however, was that one of the baby molars had to be extracted. And so, a tooth was lost.

"Well, that was only a baby tooth and another will grow in its place," thought Mrs. Smith, when Doctor Brown solemnly said, "I am awfully sorry to have had to extract this tooth. It should have remained in the mouth at least another six years, to help Junior chew his food and to aid in the growth of his jaws."

"What would you suggest, Doctor?" inquired Mrs. Smith with anxiety.

"I would suggest," replied Doctor Brown, "that the remaining teeth be filled where necessary and that the baby have his mouth examined regularly at six-month intervals. It is important to see that the space formerly occupied by the extracted tooth is retained for the permanent tooth which is to come through the gums in about six years."

It was unfortunate that Doctor Brown had not also informed Mrs. Smith that even at three years of age Smith Junior had not only his baby teeth but also most of his permanent teeth present in various stages of growth in different parts of his jaws. The baby had as many as fifty teeth, seen and unseen, completed and uncompleted, hiding behind his little dimpled chin and rounded cheeks. It was not until three years later, however, that Mrs. Smith was again reminded of the advice of Doctor Brown, that Junior should be taken to the dentist at six-month intervals.

Junior was, at this time, preparing for the greatest event in his young life, his first day at school. Mother was busy getting him ready for the great moment. The school building soon loomed huge and foreboding before Junior's childish eyes and he was of half a mind to cry and ask his mother to take him home, when he recognized one of his playmates bent on the same mission. The instinctive desire to be considered a regular fellow impelled Junior onward and finally brought him before the school clerk. A number of questions were asked of Mrs. Smith regarding Junior's date of birth, his middle name, and so forth. Junior was experiencing a new feeling of importance. Finally, the clerk inquired for a physical and dental health certificate. "Why, Junior hasn't been sick a day. He is perfectly well," assured Mrs. Smith.

"Oh, he certainly looks like a very healthy child," said the clerk, "but the regulations of the Board of Education require these certificates. I am sure in your case it is only a matter of form."

Mrs. Smith reflected on Junior's temporary interruption of his educational career and stopped at the professional building. An x-ray disclosed a badly decayed permanent first molar tooth which had drifted into the space formerly occupied by the extracted baby tooth, lost some three years earlier.

"This tooth will have to be extracted," was the verdict pronounced by Doctor Brown. "It is really too badly infected to save at this time. Had you been here at least one or two years earlier it could have been saved. I am terribly sorry Junior has to lose this tooth. It is something that could have been avoided."

What had started out to be one of the happiest occasions in Junior's life was now ruined for him. Junior was for some days hardly in condition to pay attention to his teacher, nor was he at all anxious to join in the games which were so new and interesting. However, time, the great healer, did his job. In a short while the extracted tooth was forgotten, and Junior joined the great army of eager-faced youngsters who daily wended their way to the neighborhood school.

"John," said Mrs. Smith one fine June Sunday a few years later, "have you noticed anything peculiar about Junior's face?"

"No," said Mr. Smith, who continued driving on the right side of the road, enjoying the countryside, and vaguely planning his late summer vacation. "No, I haven't noticed anything unusual about Junior's face. I think he looks pretty good."

"Well, I have," said Mrs. Smith, "and it looks to me like his jaw is all to one side and his upper teeth come way out of his mouth."

Mr. Smith was not to be swerved from his pleasant mood at this time. However, several days later Junior came home and complained that the boys had been calling him "Buckteeth." That was the last straw. Junior was forthwith taken to Doctor Brown, who referred him to an orthodontist, a specialist who straightens teeth. Here again Mrs. Smith heard the same old story.

"Did not Doctor Brown advise you to visit an orthodontist sooner?" asked the specialist. Mrs. Smith admitted somewhat shamefacedly that she had not taken Junior to a dentist for almost six years. After all, he seemed to have been losing teeth right along, and since he was getting new ones, there was really no sense in filling the baby teeth.

"Yes," replied the specialist, "that was just the time you should have had the teeth examined regularly, so that any developing abnormalities could have been checked before they became fully established." Young Smith wore "braces," appliances for straightening his teeth, for the better part of his junior high school course.

The Smith boy's dental experiences in the past, as we have seen, had always come under unfavorable circumstances. At no time had he gone to the dentist unless he was absolutely forced to do so. And, now, as a young business man, Smith's dental needs were again forcibly brought to his attention. This time it was not physical pain but mental doubt. He had not been doing as well as he

thought he should. One day he heard a speaker remark over the radio, "Sound teeth are important to success in health and life."

The following morning young Mr. Smith took time to examine his own teeth in the mirror. It occurred to him that this was the first time, as far back as he could remember, that he had actually looked at his own teeth, and yet, the thought occurred to him: "People must be looking at my teeth whenever I speak to them. Maybe I ought to visit a dentist." This time, Junior, the young business man, had to introduce himself to Doctor Brown, who, of course, marveled at "how the boy had grown." When young Mr. Smith finally paid his last visit to Doctor Brown's office he was wearing two brand new and rather extensive dental bridges. Most of the teeth that had formerly been so beautifully straightened and which were afterwards so utterly neglected had now been extracted. Would it not have been better had Junior been taught to go to the dentist regularly?

A study of the dental condition of the children in the vocational schools of New York City brought to light the dire consequences of early neglect of the teeth. Boys and girls between the ages of 15 and 19 years whose teeth had been neglected were found to have impaired health. They had difficulty in getting along with their friends and fellow-students and, what is perhaps most important, their dental condition interfered with their opportunities of obtaining employment.

REPORT OF PUBLIC RELATIONS COMMITTEE, AMERICAN ASSOCIATION OF ORTHODONTISTS

Committee Changes.—This association during the 1938 regular annual meeting consolidated the former elective Legislative Committee and the former appointive Socio-Economic Committee with the Public Relations Committee. The Public Relations Committee was continued, and the duties of the Legislative and the Socio-Economics Committees were transferred to the Public Relations Committee. The very nature of the duties assigned these three committees was so interwoven as to create confusion and force each committee to trespass upon the field of activity of the other. As a result these committees felt somewhat embarrassed and reluctant about advancing any programs of a progressive character.

This new arrangement will place the responsibility of coordinating activities in one group. We believe this to be a forward step as things are developing, even though the Public Relations Committee was not eager to have any more duties to perform.

Due to the pressure of time and the absence of some principal parties when these changes were made, several important things were unintentionally overlooked. We should like to bring these items to your attention for correction as their restraining influence will interfere with the proper functioning of the committee.

President McCoy, in his address, suggested that the Socio-Economic Committee be enlarged so that subcommittees might be provided to study certain specific problems and give the Association the benefit of their findings. This is a matter of vital importance. The by-laws should be so amended as to provide the Public Relations Committee with authority to appoint such subcommittees as seem warranted, subject to the approval of the Executive Council.

In prescribing duties, the committee was assigned the specific duty of recommending to the Association methods for lay education in orthodontics. It should be made broader by changing it to read "lay and general education."

Our most effective and economical approach to lay education is through professional groups, who constitute the real teaching fraternity in this country. With these changes the Public Relations Committee will be in a position to carry on a more extensive program.

In last year's report the committee endorsed in principal the public relations plan sponsored by the New York Society of Orthodontists. This called for the establishment of an active, year-round publicity bureau, such as nearly all large professional and business organizations maintain to look after their general welfare. This year, your committee, with the cooperation of the Public Relations Committee of the New York Society, and the Program Committee have brought Dwight Anderson to this meeting to meet you in person and explain the plan.

This plan was submitted to the Association last year, and was regularly authorized and approved with an appropriation of $1,250.00 by the Association, to be matched with a like amount by the sectional societies. While this was a creditable business move, your committee and the officers considered it advisable to carry the plans forward without entailing any expense until the amalgamation of the sectional organizations with the national organization had been completed. The process of reorganization has gone forward at a surprising rate of speed, due to the splendid spirit of cooperation on the part of the sectional groups. The new structure has practically been completed, with evidence pointing to a substantial increase in members. With our house now in order, the committee feels the time has arrived to set the public relations bureau in motion so as to promote our ideals and objectives more forcefully.

Socialized Medicine.—Politically and figuratively speaking, we are not out of the woods as yet, when it comes to the consideration of the time-worn subject of socialized medicine.

It was pointed out in the 1937 report and again in the 1938 report that powerful political influences were at work to amend the Social Security Act to provide for a public medical service of mammoth proportions. This not appearing politically expedient, other avenues of legislative approach would be tried to fulfill the health program as originally designed by the sponsors of the Social Security Bill.

Shortly after the American Medical Association convention, a committee appointed by President Roosevelt held a conference in Washington on July 18, 1938, to study the problem of providing the country with a more adequate and government controlled public health service.

Five specific recommendations were made by this committee:

1. To enlarge the public health service, as now partly provided for in the Social Security Act, and to increase the amounts now expended for maternal and child health under the Social Security Act.

2. To engage in a ten-year program of hospital expansion by provision of 360,000 beds and the construction of 500 health and diagnostic centers.

3. To increase the amount of medical care for the medically needy, whose number is believed to total 40,000,000 persons.

4. To encourage by federal grants more general medical programs in the states for self-supporting persons. These plans are to be carried out either by a system of public health insurance or a public medical service program.

5. To initiate federal action toward the development of programs of disability compensations.

The president's committee to coordinate health and welfare activities, headed by Miss Josephine Roche, proposed a ten-year program of cooperation by state and federal government which contemplates an annual expenditure of $850,000,000.

It is significant to observe that on July 31, 1938, Thurman Arnold, assistant attorney-general, publicly accused organized medicine as violating the antitrust laws and called for a grand jury investigation.

On December 20, a federal grand jury returned indictments charging violation of the antitrust laws against the American Medical Association, three affiliated medical groups, and twenty-one individuals. Specifically, it charged that the Association, some local societies, and individual physicians were preventing other physicians and cooperative medical organizations from supplying medical service by refusing membership in medical societies to individual physicians who joined such groups.

The government's case was for the most part based on opposition that developed in medical societies against the Group Health, Inc. This association was formed to provide medical care for members of the Federal Home Loan Bank, whose director had pledged public funds to support the movement.

The American Medical Association retaliated with a declaration that the statement to the press by the assistant attorney-general apparently offered the American Medical Association an opportunity to avoid trial by consenting to decrees which would assure the cooperation of the medical association in the operation of cooperative clinics.

It becomes apparent that organized medicine should have nothing to say about methods of payment for medical services; it is even proposed that hospitals shall have nothing to say as to who may or may not practice within their walls. The statement of the attorney-general is in accord with the point of view which he has taken for some time in relation to our government.

Apparently it remains to be determined whether or not the federal administration can use the laws and the courts to mold the people of the United States to its belief in every phase of life.

Until the courts have spoken, physicians need have no fear as to the legality of the service they render, or as to the place which the American Medical Association occupies in our national economy.

In this connection it has been interesting to find that a bill was introduced in the last session of Congress authorizing the establishment of a body politic to be known as Group Hospitalization, Inc., to engage in medical practice on a broad scale.

Again in the current session of Congress we find the same type of bill introduced on January 10, by Mr. King. It was read twice and referred to the Committee on the Judiciary.

In our 1937 committee report, we brought to your attention Senate Bill No. 885 by Mr. Capper, with the title, "To Aid in Alleviating the Loss Caused by Sickness." The same type bill has again been introduced in the present session of Congress. It is now known as Senate Bill No. 658. It has been read twice and referred to the Committee on Finance.

It authorizes the establishment of a Federal Health Insurance system of monstrous proportions. It calls for an appropriation of $200,000,000 to be apportioned among the states to aid them in developing and maintaining adequate systems of health insurance. The general fund, out of which benefits are to be paid, is created and maintained by authorizing a tax equal to at least 6 per cent of the total wages paid by employers to employees.

Dental services of an extensive character are provided by authorizing the services of dentists in general practice in exodontia, plastic fillings, and prophylactic treatment and care.

It further provides for the services of a dentist in general practice in such other treatment and care, including such restorative work, as may be found necessary to correct conditions which are prejudicial to health, or are causing or threatening to cause disability, or are interfering or threatening to interfere with the pursuit of a gainful occupation.

Another Health Bill before the 76th Congress is H. R. 2423, introduced by Mr. May on January 12, 1939. It has been referred to the Committee on Interstate and Foreign Commerce. How it came to be referred to such a committee on commerce is one of the strange things of politics. This bill authorizes the establishment of a United States Post Graduate Medical and Surgical College and Research Institute, to provide properly trained medical, surgical and health personnel for the military, naval, and public health services; to coordinate and improve health research activities of the Federal Government and for other purposes. The purposes of this bill and its limitations in relation to public health service make it a bill of real merit.

As an outgrowth of the work of the President's Interdepartmental Committee, created to study the National Health Problem, we come to the one now frequently commented on by the press. Since it is recognized as an administrative bill, it is considered a live issue. It is Senate Bill 1620, "To provide for the general welfare by enabling the several states to make more adequate provision for public health, prevention and control of disease, maternal and child health services, construction and maintenance of needed hospitals and health centers, care of the sick, disability insurance, and training of personnel, to amend the Social Security Act; and for other purposes."

It was introduced by Senator Wagner of New York on February 28, 1939, read twice and referred to the Committee on Education and Labor. Under the broad terms of the bill it would provide either limited services to the indigent or all could share in it on a contributing basis as the states may choose. If a state desired to institute a health insurance program, the state would be at liberty to do so. The states would be required to match federal funds on a ratio varying with their needs and financial resources.

It is divided into two sections for federal administration. A Children's Bureau with a chief answerable to the Secretary of Labor would administer maternal and child health services. All rules and regulations governing its conduct must meet the approval of the Secretary of Labor. Under this arrangement, representatives of Labor would assume control of an important branch of the Public Health Service. The administration of the more general health work would be placed under the control of the Surgeon-General of the Army.

This bill, and all the others, provide for an advisory board of medical men with dental representatives, but observation and experience teaches us that all such boards are purely mythical, as they are without authority. It is our opinion that this would not make a very healthful situation insofar as it relates to the economic and physical well-being of the people. The incalculable cost of such an experiment, especially at this time when the gov-

ernment is functioning on borrowed money, vast sums needed for armaments, and business breaking down under the present load of taxes, does not give it a very favorable chance for passage.

The rankest kind of extravagance and inefficiency is usually associated with these social reforms. As an example: A recent inquiry disclosed in one nearby state (Oklahoma), where a couple of general hospitals were built for the poor public by the state, that one was without equipment and the other had seventy patients and seventy-one on the pay roll during the last primary election. This state, regardless of all reports to the contrary, is not much better, or worse, politically, than all the others, through which the Wagner Act would expect to function in the interest of the public welfare.

If political parties wish to assume control and engage in the practice of medicine, they should first inspire the confidence of the public by precept and example with a code of ethics of fair and honorable dealing such as the professions of health have done.

Political Inertia.—The health professions, on the other hand, have cherished almost an egotistical pride that the vocation of medicine and dentistry should not concern itself with politics. As a consequence, in this day of growing government expansion they have found themselves in a most vulnerable position. Certainly this impotency in politics rests neither on a personal inferiority, nor need of organization power. Votes are the essence of political influence. Other minority groups are cognizant of this to a realistic degree and endeavor to achieve their political ends by an efficient mobilization of their voting strength, especially when individuals and principles concerning their welfare are presented in various elections. To portray this fact graphically, one has only to observe the reaction of prospective candidates and their platforms in their political attitude toward trade unionism, as compared to that manifest towards the professions.

The self-sufficient and self-satisfied attitude of the health professions is allowing political movements with their propaganda to have a most demoralizing effect upon its economic status and moral responsibilities to the public. The several major health professions with their numerous special organized units have been failing to lend inspiration and guidance to each other in effecting a solution to this most menacing political situation. Surely the old proverb, "In unity there is strength," should command the respect of the health professions and all subsidiary organizations when they have been placed on the political auction block.

With the threat of state medicine being held in abeyance, the health professions by their own initiative are now slowly devising ways and means of putting more health services within reach of those in the low income brackets by approving nonpolitical systems of voluntary health and indemnity insurance. This undoubtedly offers the best solution of the problem. It will enable the recipient to pay for medical care as he goes to those administering the services. Some insurance company statisticians claim that 80 per cent go in debt for maternity care, 80 per cent are constantly in debt due to purchasing beyond their current income, and 80 per cent go in debt for burial services. This would indicate that our standards of living are far above the average per capita income of the people.

While we all realize there is plenty of need for improving health service and are more than ambitious to improve the situation by sound socio-economic methods, the crying need on the part of the public has been magnified dreadfully.

The longevity of life has been increased about five years during the last fifty years. This is a five-year improvement within one generation, in spite of the enormous increase in accidental deaths by automobiles. It has reached the point where the life insurance companies are about compelled to set up a new death rate table upon which to do business.

Status of the Dental Specialist.—It is gratifying to witness the widespread interest now being manifested in the present and future status of the dental specialist. For the past three years the National Board of Dental Examiners have had a special committee studying the situation. Dr. William F. Bell of the North Carolina Dental Board, acting as chairman of the committee, has at the last three annual meetings made a report on the subject based upon questionnaires submitted to state dental examining boards, dental college deans, specialists, and general practitioners "to determine the present status of dental

specialists, the educational facilities for postgraduate training of the specialists, the possibilities of legislative control, and the advisability of recommending changes in the present setup.

The summation in the committee's last report at the St. Louis meeting in October, 1938, was, in brief, as follows:

Investigations and study show that the present system for the preparation and training to qualify the general practitioner as a specialist is inadequate.

The setup for specialty training is a matter of education and should be provided by our educational institutions. It is logically their problem and should command the interest and full support from the specialized groups. If the schools and specialized groups fail in their cooperation to this end, then it may become necessary for some other means to be devised to remedy the present condition in justice to the general public, the practitioner, and the qualified specialist.

It might be well at this point to offer a brief statement as to the difference between the terms "postgraduate" and "graduate." As the terms are used by the schools, "postgraduate" applies to the shorter courses of one or two weeks or a month of intensive clinical instruction in selected fields, and does not lead to a degree or certificate of proficiency; while "graduate" refers to the more extensive courses in biologic and clinical training of one year or longer, ending with a degree of Master of Science, or certificate of proficiency.

From the information received from those schools offering postgraduate and graduate courses in the various specialties, most courses are of very short duration. These short courses can serve little more than a "review course" for the general practitioner and are far from offering the training that should be required for one equipping himself for superior knowledge and ability in a particular field of practice as a dental specialist.

In regard to graduate courses:

One school offered a one-year course in public health dentistry, ending with a degree of Master of Science,

Three schools offered one-year courses in orthodontics, ending with a degree of Master of Science,

Two schools offered one-year courses in orthodontics and oral surgery ending with the degree of Master of Science,

Two schools offered one-year courses in orthodontics and oral surgery with no degree.

One school, through its bulletin, advised that it would give graduate courses in ten different subjects, each one leading to a Master of Science degree.

One of the recent questionnaires sent to the dental schools asked if any years of general practice were required before graduate or postgraduate applicants were accepted. Of the thirty-eight schools replying only one had such a requirement. Further, it was shown that all the schools offering graduate courses would accept candidates immediately following their completion of the undergraduate course.

The National Association of Dental Examiners Committee went on to relate that it believes all specialties are predicated on a knowledge of general practice, and it would develop a broader understanding of the fundamentals before beginning the practice of a specialty.

Proper knowledge and conception of the fundamentals of general practice are a distinct advantage to anyone who contemplates the practice of any of the specialties. The committee report of 1936 and 1937 stated that general practice from three to five years should precede preparatory training for specialization.

Other angles of the dental specialist question that have received much study in recent years have been those of licensing and certifying the specialist. The need of some means of examining or certifying the qualifications of those wishing to specialize in some one branch of dentistry is becoming more apparent each year.

The specialized groups themselves by establishing their own certifying boards within themselves for recognizing the proficiency of their members are offering a very logical aid in the solution of the problem.

Three states already have statutory provisions for licensing of dental specialists. When certification of specialists becomes more widely employed in dentistry, such statutory measures may be supplemented with a closer working relationship between the certifying and licensing bodies.

The American Association of Orthodontists has already established a certifying board for their own group. The same is also being contemplated by the American Academy of Periodontology. Dr. Harold J. Leonard has presented such a plan to the academy.

An organized movement headed by Dr. Leonard was made during the 1938 American Dental Association meeting in St. Louis to interest other organized groups in furtherance of the plan. Two representatives of each of the organized specialties in dentistry, together with representatives of each of the national dental organizations, were invited to meet for the purpose of setting up an Advisory Board for Dental Specialties and to formulate standards and procedures to guide the specialties in organizing their individual specialty boards.

The plan should accomplish much toward establishing a system of certification of qualified specialists.

The National Association of Dental Examiners Committee believes that the adoption of certifying boards by specialized groups would promote a higher type of specialist in that it would be an incentive for the specialist to obtain a certificate of proficiency in his selected field, thus establishing his qualifications for the benefit of other boards of examiners, the general practitioner, and the public.

The establishment of such certifying boards within each specialty would be an initial basis of procedure in building a sounder foundation for the educational criteria and professional qualifications of future specialists.

These conferences, which have been started by specializing groups, if continued, may largely determine the future status of dental specialization and certification. The responsibility assumed and the constructiveness of policy adopted by the individual groups themselves can solve many of the problems heretofore confronting the committee. Recommendations must largely be predicated upon the theory that these bodies will adopt an educational program commensurate with the biologic and clinical requirements of adequate preparation in conjunction with a system of certification.

Three recommendations were made and adopted as follows:

1. That the National Association of Dental Examiners urge the American Association of Dental Schools and the Educational Council to make provision to supply the necessary graduate training to adequately equip applicants for the various specialties of our profession.

2. That the National Association of Dental Examiners appoint two delegates to meet with representatives of other groups to study the feasibility of promoting means and methods of establishing systems of certification of dental specialists and report back to this body at their next meeting.

3. That a copy of these findings be sent to the Secretary of the American Association of Dental Schools, to the Secretary of the American Dental Association, to the Secretary of the Educational Council, and the Secretaries of the six specializing groups; viz., Orthodontics, Exodontia, Periodontology, Periodontia, Prosthodontia, and Public Health Dentistry.

Your own Public Relations Committee wishes to commend the National Association of Dental Examiners and the American Academy of Periodontology for the active interest they have taken in this important subject. We furthermore wish to express our appreciation for the credit accorded organized orthodontics and its members for establishing systems for licensing and certification.

While we agree with all the fundamental principles set forth in their committees' findings and recommendations, we do, however, wish to voice our opinion on some phases of the problem with the idea of being helpful. There can be no mistake about organized orthodontics being in complete sympathy with this movement.

First, we should like to point out that we do not believe the committee intended that the one- and two-year courses now being offered in orthodontics by the universities

should be classified as being inadequate. It must be remembered that graduate training in orthodontics is more advanced and firmly established than the other major specialties. The report surely had reference to the unsettled and unstandardized condition of graduate educational facilities as a whole. Be that as it may; it should be comparatively easy to solve as there is a sincere desire upon the part of all the educational agencies to bridge the gap by putting graduate education for specialization on the plane it deserves. About the only thing needed is a coordination of effort on the part of the different agencies. The organization and proper functioning of the Advisory Board for Dental Specialties should do much to bring this about. This association was represented by the President and the Secretary at the October, 1938, meeting, and we are requested to select two delegates to attend a meeting called for July 18, 1939, in Milwaukee.

Dr. R. E. Lisher, in an address before this Association at Hollywood, on the subject of principles and obligations of orthodontic education, very convincingly pointed out that the problem was a major responsibility of organized orthodontics and inferred that the Dental Faculties Association would welcome any proposals for improvement.

It is furthermore consoling to get word that the Council on Education of the American Dental Association as a reorganized successor to the Dental Educational Council of America which did such creditable work in elevating the standards of dental education by coordinating the theories advanced by the National Association of Dental Examiners, The Dental Faculties Association, and the American Dental Association had about perfected its organization. It will, according to present declaration of policy, act specifically as an agency for accrediting the course of study in dental schools of the country in a way to generally promote the interests of dental education. As soon as plans of procedure which are now being considered are formulated and adopted, the Council will proceed to examine the course of study of the schools with a view of reclassifying them. A closer working relationship between the American Board of Orthodontics, the Dental Faculties Association, and the Dental Educational Council should lead to a better understanding and more uniform standards.

While your committee fully realizes that three to five years in general practice would provide much in practical training before taking a graduate course for preparation to practice a special branch, it does not consider it practical to attempt to enforce such a policy for advancement in scholastic training.

The problem of time and expense attached to several years in general practice before being able to meet the more necessary qualifications for specialization does not warrant such a sacrifice under present-day educational standards. Your committee was glad to see this recommendation in more modified form in the 1938 report as compared with their 1936 and 1937 reports.

Among the nine recommendations made by the Advisory Board for Dental Specialties in St. Louis last October, we find one as follows: That the preparation for specialties after 1944 should be a Master Degree, or equivalent, earned under a graduate faculty and devoted to appropriate subject matter, plus three years in practice.

We should like to suggest that after the word "matter" the phrase "in an approved school" be added, and the phrase "three years in practice" be clarified. It is obvious that the phrase "in an approved school" is essential to enable all officials and nonofficial boards of examiners to enforce proper conformance to educational standards on the part of students and educational institutions.

The phrase "plus three years in practice" is ambiguous as it is not specific enough to determine whether it means three years in general practice and one year of graduate training to qualify for licensing or certification, or whether it means one year graduate course and three years in a special field to qualify for certification. "Plus" means a quantity to be added, and it makes no difference in the total whether it is one plus three, or three plus one. If it means three years in specialized practice, it cannot have any place in an official licensing system, because dentists are prohibited from holding themselves out as specialists until they have acquired a legal permit. It may, however, be applied advantageously to an unofficial system of certification.

For convenience of discussion and practical application, it must be clearly understood that there is a vast difference between the two systems. The licensing system is compulsory and functions by legal persuasion, whereas the certification system is voluntary and functions by moral persuasion. The licensing system does not make it mandatory upon its candidates to engage in a limited or exclusive practice. The certification system may justifiably insist upon a limited or exclusive practice for a certain term of years. The legal system cannot compel the licensee to conduct a limited practice in that branch of dentistry in which he may hold a special license.

The certification plan may require the candidate to submit proof that he is a recognized specialist with a limited practice by requiring him to be a member of his respective specialty organization.

It is comparatively easy to develop and set in operation a certification system. Any one of the national specialty organizations can elect to establish the system if they choose and go to work certifying. The licensing system must be adopted by the general practitioners of each state and go before the legislature and the governors of the different states for their approval.

It is plainly evident that state boards of dental examiners are being faced with a very embarrassing and difficult problem in dealing with the already large and rapidly increasing number of applicants seeking dental licenses to engage in the practice of a specialty. Certainly both the licensing method and the certification method of determining proficiency would do much toward alleviating the situation by furnishing credentials to specialists for state boards of dental examiners.

The need and field of service for both systems is great enough to justify the promotion of both systems. We should, however, like to see as much emphasis placed on the value and desirability of the licensing system as is being given to certification.

This explanation is made to promote a better understanding of the subjects and to help keep things straight in dealing with this problem.

Commercial Postgraduate Education.—Although commercial postgraduate schools have fallen into disrepute due to the gradual enlightenment of the professional conscience, we still find a few who have no respect for the more ethical principles and improved educational standards.

Some months ago a certain group of adventurers conceived the idea of establishing a correspondence school to teach orthodontics. They undoubtedly must have thought the dental profession had been denied something when correspondence courses in "hill-billy" music were being offered for a dollar a package over the radio. We are of the opinion that the advertising managers of the independent dental journals did not consider their applications for advertising space a good thing for dentistry. The publishers have come to realize that those things which are not good for the dental profession and the public are ultimately no good to them.

It is embarrassing, however, to see regularly constituted dental societies so mercenary as to solicit business for a school whose chief stock in trade is the selling of patented orthodontic appliances. We find a glaring example of this covering page 504 in the March, 1939, number of the Journal of the Second District Dental Society of Brooklyn, N. Y.

These, of course, are only by-products of an old custom of some years ago when dentistry was recognized as being more of a commercial art than a profession. Our improved standards have come about by learning better methods and striving year after year to put them in operation, so it is only logical for us to assume that these old customs will give way with each succeeding year to higher ideals.

Commercial Practice.—It is gratifying to see the publishers of dental journals in recent years taking a keener interest in the profession's ethical standards. During the past several years, we have seen the gradual elimination of many advertisers who were either knowingly or unknowingly making a vicious racket out of the practice of orthodontics by offering a mail order diagnostic and treatment service. We still find some by-products of this old system of quackery, but the publishers of the dental journals are for the most part showing a splendid spirit of cooperation. The only remaining offenders are the official Journal of the

First District Dental Faculty of New York and the Dental Items of Interest, and they are endeavoring to effect a proper solution of the problem.

Process Patents.—The patent problem which was referred to the committee about two years ago for investigation is still being studied. Last year's report pointed out that it was in an unsettled condition, and we should look to the American Medical Association for its solution.

The American Medical Association was at this time considering plans for the establishment of a corporate body wholly altruistic in character to administer patents in the medical and health fields. The committee recommended that this organization show an interest in the nonprofitholding company being considered for this purpose by the American Medical Association.

This organization was invited to send a representative to meet with the Patent Committee of the American Medical Association on March 15, 1939.

President-Elect William Murray attended as a representative of this association. He reports that plans are still in a formative state, but real progress is being made. A full report of the proceedings has been promised this organization when it is ready for distribution.

Summation.—Again we wish to emphasize the fact that the best solution of the major problems confronting this association are dependent upon the dissemination of proper information to the health professions and the public.

Orthodontic progress of the future will be determined by the influence and power of education. Orthodontics is the major specialty of the second largest health profession, and we stand without anything but a professional program of education, and it a very restricted one. Organized orthodontics is leaning almost entirely upon the voluntary and sympathetic assistance of allied health agencies to fulfill its own educational responsibilities to the public. Naturally it is not being given the attention it deserves.

We, therefore, believe the time has arrived for us, as an association, to establish an active public relations bureau with a program of our own for the purpose of properly directing orthodontic thought and action.

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TREATMENT OF OSTEOMYELITIS OF THE JAWS

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THE subject of osteomyelitis of the jaws is one of equal interest to the general practitioner and to the specialist in oral surgery. Its occurrence in general practice is a very unfortunate and much dreaded event that may be the source of considerable anxiety and no little degree of chagrin to the dentist. When a case of this nature comes under the care of the specialist, it means a prolonged course of difficult treatment shadowed by the possibility of serious complications. The fact that 83 per cent of all cases of osteomyelitis of the jaws are caused directly or indirectly by diseases of the teeth at once throws this problem into the realm of dentistry. Certain anatomical peculiarities incident to the presence of teeth in the jaws makes the principles of management of osteomyelitis differ from those principles used in the treatment of osteomyelitis of other bones.

Much has been written regarding the differences between osteomyelitis occurring in infants, in children, and in adults. The diseases are one and the same and, as far as the diagnosis and treatment are concerned, do not differ. In infants the mortality is much greater, often amounting to as much as 25 per cent. In childhood osteomyelitis is usually of a more extensive character than it is in the adult due to greater vascularity of the bone and also to the presence of unerupted teeth in the alveolar bone. The plan of treatment regardless of the age of the patient or the cause of the disease should be a conservative one. Radical operative procedures in the treatment of osteomyelitis of the jaws should be condemned as being unnecessary, unscientific, and dangerous. It is generally agreed that the best ultimate results follow conservative surgical intervention. In many cases radical surgery has led to disastrous results and serious deformity.

Acute osteomyelitis of the jaw is ushered in by very dramatic severe symptoms, the chief of which is pain. The pain is deep, dull, and boring in character; it may radiate to all parts of the jaw at the onset of the process but becomes more localized as the acute phase of the infection begins to subside. The pain is usually always associated with chills and temperature elevations ranging between 102 and 105° F. The pulse is accelerated. The area in the bone affected by the acute osteomyelitis is tender to pressure, and the adjacent soft tissues

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may show severe cellulitis. After a day or two trismus may set in as a result of involvement of the muscles of mastication. The blood picture is that of an acute infectious process with especially marked increase in leucocytes. After about five to seven days the pus will usually localize and will find its way to the subperiosteal area; the abscess may rupture through the mucous membrane on the buccal or lingual surface of the jaw, or it may point extraorally. As the process progresses the adjacent teeth become tender and loosened, and pus may begin to escape from the gum margins about them. Necrosis to a greater or lesser extent is inevitable. This may involve a localized area of the bone or it may involve the entire bone on either one or both sides.

LOCAL MEASURES

During the acute stage of osteomyelitis surgical procedures, except for the drainage of localized collections of pus, are contraindicated. Some surgeons advocate stripping up the periosteum overlying the affected area and drilling holes through the dense outer plate to the softer cancellous area of the bone. I doubt that this procedure does much good before localization has taken place and also question the advisability of doing it in the face of an acute infectious process. If after a few days the clinical picture is one suggesting a collection of pus retained under pressure within the structure of the mandible, it is advisable to carefully strip up the periosteum and remove a small section of the bone with a chisel or puncture the cortical plate with a bone drill. This will provide for drainage of the active focus and may prevent widespread infection throughout the cancellous part of the bone. The application of hot or cold compresses over the area may give the patient relief from pain, but usually sedatives are necessary. If the milder sedatives do not give relief, narcotics should be given in the full therapeutic dosage without hesitation.

Frequent use of hot saline mouthwash will hasten localization of the infectious process so that incisions may be made for the establishment of drainage. Hot wet dressings are applied if there is a tendency for the process to point externally.

In some cases the patient will give a history of an acute sudden onset of pain about a tooth, and on x-ray examination a definite area of bone destruction about the apex of the tooth will be found. The findings indicate an acute flare-up of a long-standing chronic process. A localized osteomyelitis is present, and pus is present under pressure. If pus is present and adequate drainage can be established by extraction of a tooth, it should be removed. This must be done with the least possible amount of trauma. Curettage of the area may spread the infection. A small piece of gauze is inserted in the socket to maintain drainage. These infections will almost always clear up without further treatment.

The treatment of diffuse osteomyelitis can be outlined in definite steps that closely parallel the pathologic process taking place in the bone. The first step is the establishment of drainage of the affected area with the least possible amount of trauma. Drainage is established as soon as it is felt that there is a collection of pus in the bone or beneath the periosteum. This may not always be detected by palpation, but with experience the surgeon is able in many in-

stances to determine the presence of an area of localization of pus from the clinical picture. There is almost always some localization of the infection in five to seven days. Drainage is established by making adequate incisions through the mucoperiosteum on either the buccal or lingual surface of the mandible intraorally or by making incisions externally as the findings in the case may dictate. Whenever possible, incisions should be made intraorally in order to avoid unsightly scarring, but when extraoral incisions will facilitate drainage, they are permissible. In some patients both intraoral and extraoral incisions with through-and-through drainage will be necessary. Extraoral incisions are made below the border of the mandible and along normal skin lines in order to establish dependent drainage and to minimize the subsequent scar. The incisions are packed with iodoform gauze impregnated with vaseline. The dressing is changed, and the wound is irrigated with normal saline solution every twenty-four hours. As the drainage subsides, the dressing may be changed every two or three days. It makes very little difference what drug, if any, the irrigating solution contains. The effect is simply the mechanical cleansing obtained by the water in the irrigation. We have tried most of the recommended solutions including hydrogen peroxide, Dakin's solution, urea, metaphen, weak iodine solution, and several others and have not been convinced that the nature of the drug has made any difference whatsoever.

The second step is to maintain drainage and to allow the natural defense mechanisms of the host ample time to overcome the virulence of the infecting organisms. During this stage the condition changes from an acute fulminating infection to a low-grade smoldering process. The organisms become less virulent, and the host becomes more resistant to the attacks against it by the bacteria. Dead bone fragments become detached from the living bone and separate in the form of sequestra. The sequestra can be seen on x-ray examination but are usually not formed until the disease has been present for eight to twelve weeks.

The process of repair is at work. New bone, known as the involucrum, is laid down around the infected bone. The continuity and the original contour of the bone are maintained by the development of the involucrum. If early radical procedures have destroyed the periosteum, the involucrum will not form, and serious severe deformities may result. The jaws have remarkable powers of regeneration if conservative treatment is carried out and the periosteum is not damaged. The powers of regeneration are more active in the mandible than in the maxilla. If a large amount of the maxillary bone is destroyed, not much of it will regenerate. We have had three cases in which one entire half of the mandible was sequestrated, and in all of these there has been complete regeneration of the bone without any deformity or loss of function.

The third step is the removal of sequestra as they form. As soon as it is determined by x-ray that sequestra are present and completely detached, they are removed with the least damage possible to the involucrum surrounding them. By this time the original incision made for drainage will have closed to some extent, and it may be necessary to enlarge the opening and also to cut through some of the involucrum in order to remove the sequestrum. Overhanging edges and shelves of bone that obviously are not viable should be smoothed off with

rongeurs. Several operations may be necessary, as sequestra may continue to form for a period of several months. This is usually not true, however, if adequate drainage is maintained and particular attention is given to building up the general resistance of the patient.

It is also best to take a conservative attitude regarding the removal of teeth in these cases. Many times teeth that seem to be hopelessly loosened will be found to tighten up and become very useful if allowed to remain. Vital loose teeth may be splinted if necessary by ligating them to a simple platinoid buccal or lingual arch wire. Care must also be exercised in the treatment of osteomyelitis in children with unerupted teeth so that undue damage to the tooth follicles can be avoided. No tooth should be extracted unless it is found to be nonvital and actually involved in an area of dead bone.

Good oral hygiene is essential. All infected roots and broken down teeth should be extracted and calculus removed from the teeth. Brushing the teeth three times daily with a soft brush and hydrogen peroxide will maintain the mouth in a hygienic condition.

In cases in which a pathologic fracture is likely to take place, splints should be applied to the remaining sound teeth or interdental ligation should be performed. When a pathologic fracture is anticipated, it is wise to take impressions of the maxilla and mandible so that splints can be constructed and applied without difficulty in the event that such a complication does take place.

SPECIFIC MEASURES

As soon as the diagnosis of acute osteomyelitis is made, I feel that sulfanilamide therapy should be started even though the type of organism has not been determined. In over half of our cases in which bacteriologic studies have been made, hemolytic streptococci were the sole infecting organisms, and in a good percentage of the remainder it appeared in association with other organisms. In those cases where the organism is of the hemolytic streptococcic type, great benefit may be derived, and in those where it is not present, no harm will be done. The results of treatment with sulfanilamide thus far have been rather gratifying. In a few cases what appeared to be early widespread infections of the adjacent soft tissues have been aborted by its use. This drug is most effective when used early in the course of the disease. It serves the purpose of holding the infection in check until the natural defense forces of the host have been mobilized to the point where the infection can be overcome. Sulfanilamide is best given after the method of P. H. Long and E. A. Bliss[1] which is as follows:

Adults.—3 to 5 gm. (45 to 75 grains) initial oral dose, followed in six to eight hours by 1.0 to 1.5 gm. (15 to 22 grains), repeated every four hours.

Children.—50 to 90 pounds: 2 to 3 gm. initial dose followed as above by 0.6 to 1.0 gm.

Children.—25 to 50 pounds: 1.3 to 2.0 gm. initial dose followed as above by 0.3 to 0.6 gm.

Sodium bicarbonate should be given in equal amounts with each dose of sulfanilamide.

To get the maximum effect of the drug, a large initial dose should be given, and this should be followed by smaller amounts to maintain the optimum blood level. This dosage is maintained until definite improvement in the clinical course is noted, then decreased by one-third and again decreased by one-third and continued at this level until the infection has subsided. The patient must be kept under close observation for the appearance of symptoms of toxicity of the drug.

Another specific measure in the treatment of acute osteomyelitis is the use of x-ray therapy. Dr. J. B. Brown, of Barnes Hospital, St. Louis (personal communication), has been getting rather promising results in the treatment of acute osteomyelitis by the use of x-ray therapy. This is a measure to be considered and should be used early in all cases. When used early, it may abort the infection and, if used later, will hasten resolution and stimulate the healing process.

GENERAL MEASURES

Measures designed to improve the general condition of the patient are important. The host cannot overcome the infection unless the natural forces of resistance are adequate, regardless of how well the local treatment may be carried out. The process of repair is likewise dependent upon the general health of the patient.

Fluids.—During the acute fulminating stage of the infection, it may be difficult to get the patient to take adequate fluids by mouth. In this event intravenous or subcutaneous fluids may be used. At least 3,500 c.c. of water daily is necessary to keep the average patient in a state of normal fluid balance. If the patient can take fluids by mouth, 3,500 c.c. to 5,000 c.c. can be taken without difficulty.

Food.—A light diet, high in minerals, calories, and vitamins is given. The diet may be supplemented to advantage by vitamin concentrates. One quart of milk and one quart of orange juice daily are desirable. Vitamin D in concentrated form, as cod liver oil, or in the form of sunshine is essential to calcium metabolism and bone repair.

Elimination.—If elimination is not regular, mild laxatives or enemas are advisable.

Sedation.—In the early stages of an acute fulminating osteomyelitis, narcotics may be necessary for relief of pain. Later as the pain becomes less severe, the milder sedatives will give adequate comfort.

Physical Examination.—A thorough physical examination should be given by an intelligent physician at the onset of the disease. Some systemic disease may be found that predisposes to infection, or the actual cause of the disease may be discovered. Diabetes, syphilis, tuberculosis, and other general systemic diseases alter the course of the treatment and the prognosis of the disease.

Rest.—Rest is essential and should be insisted upon. Hospitalization in the early stages is recommended as lack of facilities make it difficult to give the patient adequate care in an office practice.

Laboratory Studies.—Blood calcium and phosphorus determinations may reveal metabolic disturbances that will inhibit healing if not corrected. If deficiencies are discovered, therapy should be instituted. Urinalysis is valuable as diabetes or diseases of the kidney may be suggested by the findings.

COMPLICATIONS

At all times the surgeon must be on the alert for the development of complications. The chief complication is extension of the infection to the adjacent soft tissues and regional lymph nodes. These infections should be treated by the application of hot wet dressings, sulfanilamide in increased dosage, and incision and drainage along with continuation of the general supportive treatment.

Involvement of other bones of the face by direct extension of osteomyelitis of the maxilla is sometimes seen. The zygoma, nasal, frontal, and temporal bones are those most commonly involved.

Pathologic fracture is another complication that might give considerable concern. This is true especially in those cases where most of the teeth have been lost, as it may be difficult to find an effective method by which to maintain the space. When this complication is anticipated, the occluding teeth, if any are present, should be wired together or held in position by the use of splints.

Phlebitis of the facial vein with subsequent development of cavernous sinus thrombosis has been reported but is rare. Cerebral abscess, meningitis, pansinusitis, erysipelas, and tetanus have all been noted.

Ankylosis of the mandible is a late complication due to infection of the mandibular joint, destruction of the bone of the glenoid fossa, or scarring of the adjacent soft parts.

In cases of long standing that do not appear to respond to the usual method of treatment, complete bacteriologic studies should be repeated, as occasionally actinomycosis will be found. This may be a secondary invader or may actually be the primary cause of the disease. I have seen two such cases, and Dr. J. B. Brown has had three on his service.

Metastatic osteomyelitis in other bones due to spread from osteomyelitis of the jaws is rare.

After the osteomyelitis has completely subsided, it may be necessary to give attention to the correction of deformities if they have resulted. This may take the form of bone grafts to replace bone in areas where regeneration has not taken place. Cartilage transplants to correct deformities of contour are sometimes necessary. Ugly scars resulting from incision and long-standing drainage may be made less unsightly by plastic procedures for correction. Plastic procedures, especially bone and cartilage grafts, should not be undertaken until the infection has been entirely cleared up for at least six months.

CONCLUSIONS

1. Most cases of osteomyelitis of the jaws are due to dental diseases.
2. Conservative surgical measures in the treatment give the best results.
3. Sulfanilamide and x-ray therapy may be valuable adjuncts to local treatment.
4. General measures to build up body resistance are important.

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CHRONIC IRRITATION OF THE EPITHELIAL TISSUES OF THE MOUTH ASSOCIATED WITH DENTURES

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IT IS a recognized fact that from the moment the denture is inserted into the mouth, it may become a source of irritation to the mucous membrane. Pleasure[1] mentions "lateral stresses," "tripping cusps," "incorrect occlusion," "incorrect bite," and "skidding of dentures" as some of the common factors causing irritation. Kazanjian[2] says that the "wearing of ill-fitting dentures over a long period of time may cause many abnormalities of a truly traumatic type." Debris has been suggested by Pryor[3] and Pietkiewcz,[4] and Cahn[5] mentions the presence of yeast under dentures as a factor causing irritation of the tissues. Then, too, the injudicious use of clasps and clasps without occlusal rests is known to cause irritation. Thoma[6] mentions "sharp outlines of the vacuum chambers of dentures" as causing irritation.

The most common lesion observed is a break in the mucous membrane occurring in the region of the periphery of the denture and simulating a canker sore. It is usually an acute, painful, elongated, grayish ulcer. By checking the occlusion and adjusting the periphery of the denture, relief is obtained with or without resorting to topical medication. Though most patients return to the dental office at the slightest irritation, there are those who through neglect or fear do not return until a large-sized lesion has formed. Then, they may come into the office with a cancerphobia. Examination generally shows a part of the denture imbedded in a large mass which is either angry red or grayish in color and very painful. Removal of the denture, instructing the patient not to wear it for a few days, and the use of antiseptics will often give relief. The tissue in returning to normal is apt to leave a scar which may interfere with the fit of the denture. This can be corrected by surgery. In some instances, the lesion may be so large that relief will come about only through surgical excision of the hypertrophied tissue. This is done by infiltrating the submucous tissue with novocaine, excising the mass by means of a wedge shaped incision similar to taking a segment of an orange, coapting the tissues, and suturing the edges together. The excised pathologic tissue should be examined by a competent pathologist. All excised pathologic tissue reported in this paper was examined and diagnosed by Dr. Charles G. Darlington, professor of pathology at the New York University, College of Dentistry.

CASE REPORTS

CASE 1.—H. K., a single, white female, aged 31 years, came to the dental clinic of the House of Detention with a complaint of soreness in the region of the vestibule in the right maxillary premolar area under the right lip. Her Wassermann was negative.

History.—About ten years ago, the patient presented herself to her dentist and had a goodly number of maxillary teeth removed. An immediate denture

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was then inserted. She was instructed to return for re-examination, but since the denture was comfortable, she failed to go back to her dentist. Intermittently, for years, she would develop a soreness in the right maxillary region which would usually subside after using a mouthwash. Each time she inserted her denture, there were great pain and marked bleeding.

Examination.—The patient wore a modified full upper vulcanite denture with the six anterior teeth ground to the gum, the labial vulcanite missing, and with two lateral wings (right and left) extending from the buccal sides of the canines. The periphery of the right wing was imbedded in an inflammatory mass of tissue in the vestibular mucous membrane. Upon removal of the denture, examination showed an inflammatory mass of tissue about the size of a dime, carmine red, angry, and infiltrated with blood. The mass, fibrous in nature and movable, bled very easily when touched and appeared to have once been a part of the vestibule and mucosa of the lip. It now had a labiovestibular sulcus and an alveolar vestibular cleft which united fore and aft to form a thin elliptical grayish ulcer in the mucous membrane. All the mandibular right and left molars were missing, and the patient had never had a partial restoration made. The remaining teeth were in poor hygienic condition. The lower investing tissues were edematous, bled when touched, and the gingivae were slightly ulcerated.

Clinical Impression.—Chronic inflammatory tissue with Vincent's infection was found.

A smear was taken of the gums and of the maxillary lesion, and it revealed Vincent's spirillae with fusiform bacillae. Treatment for Vincent's infection was instituted. Several days later, when the clinical signs of Vincent's had disappeared and the bacteriologic report was negative, the pathologic tissue was removed.

Operation.—The area was anesthetized by subcutaneous injection of 2 per cent novocaine with epinephrine. Two horizontal elliptical incisions were made about two millimeters on either side of the fissures. The incisions were carried wedgelike down below the mass for about the depth of three millimeters. Considerable bleeding followed which was controlled by pressure. The tissues were coapted and sutured with No. 5 black silk. The area healed without incident.

Pathologic Report.—Macroscopic description: Soft (white) tissue about size of dime.

Microscopic description: Sections showed hyperplastic stratified squamous epithelium, covering one side of the tissue except for a gap which was filled in with infected granulation tissue. The underlying connective tissue was fibrotic and showed rather cellular infiltration of lymphocytes and plasma cells. Deeper in the tissue there were bundles of muscle tissue. The entire underlying connective tissue was flecked with brownish-black bodies, not bacteria.

Pathologic Diagnosis.—Chronically infected tissue (Fig. 1).

CASE 2.—R. B., a white female, aged 34 years, was referred for dental consultation to the dental clinic of the House of Detention by the nose and throat department.

History.—The patient had been suffering from sore throats for about seven years. Recently she had a sore throat and went to the French Hospital for treatment. Her throat was painted with argyrol, and she was also given a gargle. Three days before her arrest, she returned to the French Hospital, "her throat nearly closed." An incision in the peritonsillar tissue was made for drainage. She was informed that it would be necessary to have her tonsils removed as soon as she was well. A few days after admission to our institution, she came to the clinic with a complaint of a cold and a sore throat. Examination by the resident showed a marked hyperemic swelling and tenderness in the right tonsillar area. She was next referred to the nose and throat department who in turn referred her to the dental clinic.

Dental History.—The patient had the full upper denture made several years ago. Shortly thereafter, she returned to the dentist to have the denture relined because it kept falling down. After the relining, the denture had good suction, but every time she put the denture into her mouth it gagged her because, as she explained, it felt as if it went as far back into her tonsil as it could get. Yet she got so accustomed to it that she even slept with it in her mouth and removed the denture only when her throat got sore.

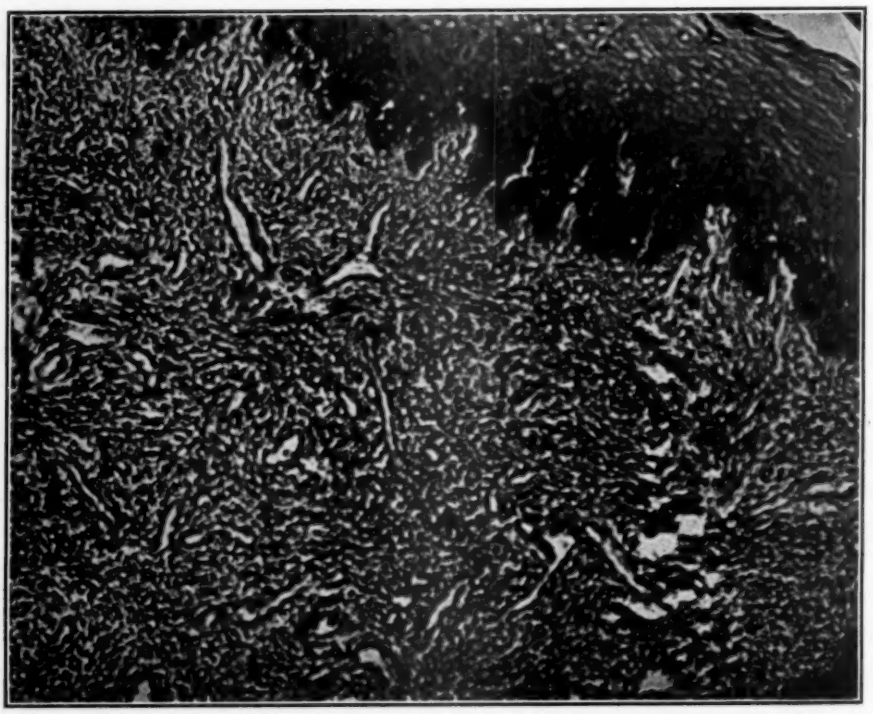

Fig. 1.—Case 1. Photomicrograph of chronically infected tissue of peripheral lesion of vestibule.

Examination.—Examination showed that the patient wore a full upper vulcanite denture. The soft palate was edematous. A grayish scar was seen where the patient had been incised. She had an unusually long soft palate. The right heel of the denture had formed a sulcus in the buccal vestibular area of the tuberosity and had cut a sulcus into the upper boundary of the isthmus of the fauces. At this point, a pedunculated hemorrhagic growth,

the size of a pea, was seen. It was attached by a narrow pedicle to the crest of the isthmus. The tissue of the sulcus was grayish white in color and appeared to be very fibrous. Further examination of the edentulous mouth showed well-formed ridges and normal mucosa. Examination of the denture showed that it had been rebased and that the posterior border covering the tuberosity was considerably overextended.

Treatment.—The overextended denture was trimmed. The patient was then instructed not to wear the denture for a few days and thereafter not to sleep with it. The next day, the pedunculated growth had completely disappeared. The patient stated that it felt as if she had lost it in rinsing her mouth. The denture was reinserted, and she now felt very comfortable with it in her mouth.

Another type of lesion that I have observed is hyperplasia of the palatal mucosa. The lesion is usually a painless proliferation of the epithelial tissue and is made up of numerous concentric papillomas, mulberry red in color, and generally confined to the tissue under the relief area of the vacuum chamber. In my cases, there were relief chambers plus a combination of factors which may have produced the trauma. From my experience in the treatment of these cases, I have come to the conclusion that radical excision of the entire pathologic tissue is the indicated surgical procedure. The area should be anesthetized with novocaine and an incision made three millimeters beyond the pathosis down to the bone and through the periosteum. The excised tissue should be examined by a competent pathologist.

Case 3.—D. R., a white housewife, weighing about 148 pounds, came to my office in October, 1936, with a complaint of soreness in the left maxillary ridge.

History.—On March 5, 1933, the patient accompanied by her physician came to my office to have nine maxillary teeth extracted. She was very nervous and had been suffering from a great number of dizzy spells. The teeth were removed under general anesthesia. One month later, a temporary rubber denture was made, and one year later, 1934, she had a full upper denture made with the common type of relief area in it. The denture was one of the thermoplastic cellulose base material (hecolite) products. For about two years following the extractions and the making of the denture, the patient did not have any dizzy spells. However, in 1935, they began to recur. She went to her doctor who made a diagnosis of tumor on the brain. This was later ruled out by the Neurological Institute, where the patient had gone for observation. Upon leaving the Medical Center, she was in a better frame of mind. A few weeks later, she had a severe attack of appendicitis, and after having her appendix removed, she felt very well. The patient had been suffering from a chronic appendix for over eighteen years.

Examination.—Examination of the mouth showed that the mandibular right premolars and molars and the left premolars were missing. These teeth had not been replaced.

Examining the mouth with the hecolite denture in place, a hole was found in the denture over the left maxillary alveolar ridge. This hole was caused by the mandibular second molar which had erupted to the point where it came in

direct contact with the denture, and constant trauma had worn the denture through at this point. Upon removing the denture, examination showed that the mucous membrane in the area of the perforation was abnormal. There was a proliferative papule about two to three millimeters in height. This papule was the cause of her original complaint.

Further observation revealed a mass of hypertrophied tissue in the center of the palate comparable to a good sized torus palatinus. The mass was about eight millimeters in width and fourteen millimeters in length and tapered as it reached the rugae. It lay in the median line opposite the first and second molars and extended equally to the right and left. Upon closer examination, the mass showed that it was made up of numerous papillae which were superimposed upon each other giving the appearance of scales. Some debrislike particles were seen in between the papules. Between the central mass and the alveolar ridges (right and left) were found several isolated papillae. These were each about three millimeters in diameter, had scalloplike edges, and appeared to be attached to the underlying mucous membrane by stalks. In addition to these papillae, there were several breaks in the mucous membrane resembling contusions.

At no time did the patient complain of pain in the central mass. The inner surface of the upper denture was unclean. It was covered with adherent particles which appeared to be imbedded in the denture.

Clinical Impression.—Hyperplastic tissue due to trauma and debris was seen.

Operative Procedure.—The mandibular molars were extracted. The irritation of the alveolar ridge and the palatal growth were treated with Talbot's iodine. The patient was instructed not to use her denture.

One week later, the irritation on the ridge had diminished, and some of the contused area had disappeared. The central palatal lesions were once again treated with Talbot's iodine and other topical medications. These treatments were continued for about a month with very little recession in the central mass. I, then, decided to take a biopsy of part of the lesion and subject the rest of the area to actual cautery.

The palate was anesthetized using 2 per cent novocaine subcutaneously. Several of the isolated papules lying between the central mass and alveolar ridges were excised with a scalpel, and the underlying tissue was subjected to actual cautery. The excised tissue was placed in a bottle marked No. 1 and sent to the pathologist. The rest of the median mass was treated with cautery, and some of the cauterized tissue placed in bottle No. 2. A medicinal cement consisting of equal parts of zinc oxide, powdered rosin, and enough oil of cloves to make a heavy paste was inserted into the palatal side of the denture and then placed in the mouth.

Postoperative Observations.—The following day, postoperative examination showed a sloughy mass of black, ashlike debris. The area was washed with a weak solution of tincture of green soap, and some of the debris was placed in bottle No. 3 and also sent to the laboratory. In some sections, capillary oozing was discernible. The medicinal cement was removed from the denture with

difficulty due to having imbedded itself in the denture. A new cement was inserted.

Three days later, considerable improvement was noticed. The wound was once again washed with soap and water, and Talbot's iodine was applied topically. The patient experienced exquisite pain upon application of the iodine which lasted until the next morning.

On the seventh day, the erythematous spots in the lateral regions disappeared. The central mass was considerably reduced, and in some spots, the mucous membrane appeared to be taking on a normal appearance. The area was again washed with soap and water, and 2 per cent gentian violet was topically applied. A new medicinal cement was inserted. The same treatment was continued for seven weeks. By the seventh week, the palatal lesion had assumed its normal appearance. The denture had settled into the soft supporting tissues and had caused a new irritation in the postdammed area. This was relieved. Several days later, the patient had a new denture made. The new denture was of a thermoset plastic, glycerine base resin material (Luxene).

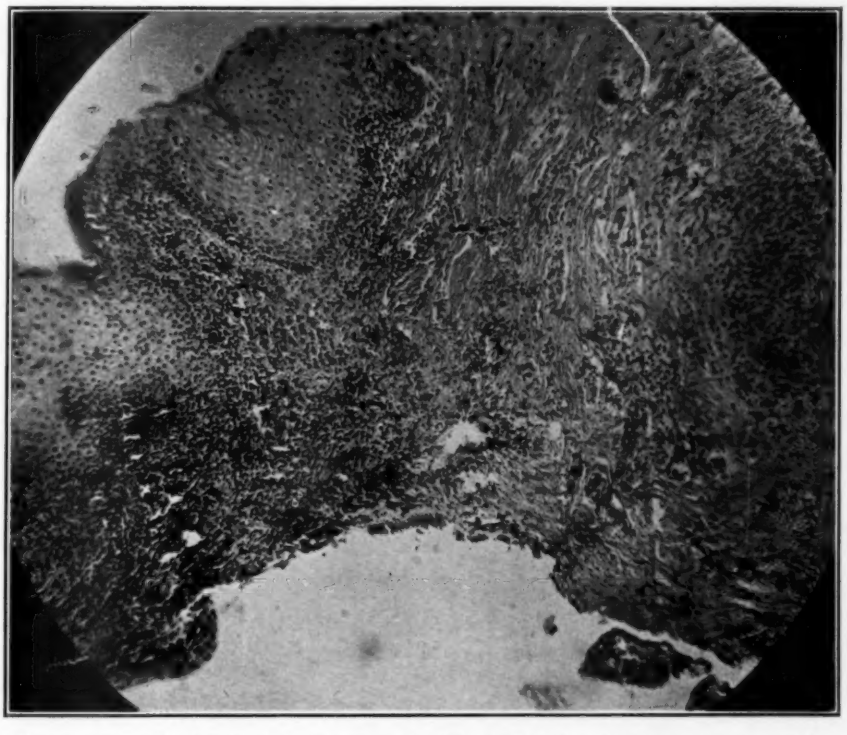

Fig. 2.—Case 3. Photomicrograph of highly infected soft tissue from palate.

Pathologic Report.—Macroscopic description: each bottle contained a few tabs of (white) soft tissue.

Microscopic description: Section No. 1 showed highly infected connective tissue somewhat fibrous in nature, also cellular infiltration of polymorphonuclears and lymphocytes and occasional hemorrhagic field with congestion of the blood vessels. Hyperplastic epithelial tissue was found overlying most of the connective tissue stroma. No malignancy was present.

Sections No. 2 and No. 3 showed highly infected connective tissue with cellular (lymphocytic and polymorphonuclear) infiltration together with areas of necrosis. Hemorrhage as well as areas of bacterial invasion were also present.

Pathologic Diagnosis.—Highly infected soft tissue (Fig. 2).

CASE 4.—C. M., a white female, aged 60 years, came to the dental clinic of the House of Detention to have a right maxillary second molar extracted. She was a short well-developed woman, weighing about 140 pounds, intelligent, and somewhat nervous. In a recent examination, high blood pressure with hypertension was found present. Her Wassermann was negative.

History.—The patient had a partial upper vulcanite denture with two clasps which had been made fifteen years ago. The maxillary right canine, second molar, and left first molar were the only teeth in situ at that time. These teeth were retained at the patient's request. About seven years ago, she had had the maxillary left molar extracted, and a tooth was added to the vulcanite denture. Since then, the denture was retained only by a clasp around the right second molar. Her mandibular molars and premolars were missing; the anteriors from canine to canine were present. She had not had any restoration made for her mandibular missing teeth.

Examination.—Examination of the partial denture revealed that the lateral and central incisors were missing, giving the denture in this area the appearance of an edentulous ridge (Fig. 3). She explained this by saying that the teeth would break off time and time again, and she finally decided not to have any put back. The palatal side (Fig. 4) was black with a debrislike material that was deeply imbedded in the denture and which was removed with considerable difficulty. It had a common type relief area in it. The margins were not too sharp. The denture was unstable, but to her, it was a denture par excellence, and she hated to part with it because "it was so comfortable."

Examination of the palate in the region of the relief area revealed an exceedingly inflamed, thickened, and dimpled mucosa (Fig. 5). It was purplish red in color and was made up of innumerable, concentric, coalesced papillomas, mulberrylike in appearance. Each growth was about one millimeter in diameter and was attached to the underlying mucosa by a pedicle. The area did not bleed to touch nor had the patient ever encountered any bleeding or pain. It extended on either side of the median line and was about one centimeter wide and one and one-half centimeters anterior-posteriorly.

Clinical Impression.—Hyperplastic tissue due to ill-fitting denture and debris was found.

Operation for Biopsy.—Under local novocaine anesthesia, a small section of the tissue (Fig. 5, *A*) was removed for pathologic examination. A medicinal cement pack was inserted in the wound. The patient experienced considerable postoperative pain radiating to eye, back of the head, and in the right alveolar ridge of the maxilla.

Pathologic Report.—Macroscopic description: Bean-sized piece of soft tissue, ragged.

Microscopic description: Sections showed fragments of soft tissue. Residual strips of epithelium (squamous) hung along the margins. It was slightly hyper-

plastic. Several "islands" and tongues of epithelium were found in the subepithelial tissue. They were well-circumscribed "pools." Basement membranes were not violated.

The rest of the corium consisted of coarse collagen. In some fields, it showed chronic inflammatory reaction.

Pathologic Diagnosis.—Hyperplastic epithelial tissue (Fig. 6).

Fig. 3.

Fig. 4.

Fig. 5.

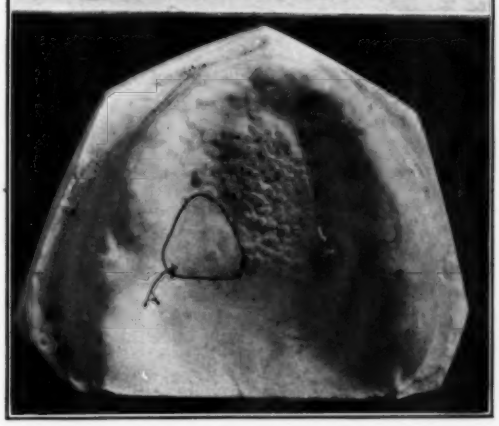

Fig. 3.—Case 4. Photograph of denture. Note missing anterior teeth giving the denture an edentulous anterior ridge.

Fig. 4.—Case 4. Photograph of palatal side of denture which was heavily coated with thick black solidified debris. Note the relief chamber.

Fig. 5.—Case 4. Photograph of impression of palatal lesion showing dimpled mucosa confined to the area of the relief chamber, after section *A* was removed for biopsy.

Note.—Is this a representative piece from the lesion? Deep "islands" of epithelium suggest (but only suggest) something more than mere hyperplasia.

Upon receipt of this report, a radical resection of the palate was decided upon. A new full upper denture was then made to be used as a medicinal carrier and to give the patient more comfort postoperatively.

Operation.—Using 2 per cent novocaine with epinephrine, the palatal mucosa was anesthetized by the block method of anesthesia in the posterior palatine canals and by local anesthesia in the incisive area. An incision was made three millimeters beyond the pathologic area following the outline of the relief area. The incision was carried down to the bone, and the entire tissue including the periosteum was removed. The underlying bone was normal in appearance and was left untouched. Very little bleeding was encountered. A medicinal cement consisting of equal parts of zinc oxide, powdered rosin, and enough oil of cloves to make a heavy paste was made and placed into the palatal side of the new denture and inserted into the mouth. This was left in place for a few days, then removed, and a new cement was inserted. The excised tissue was again examined pathologically, and following is the report.

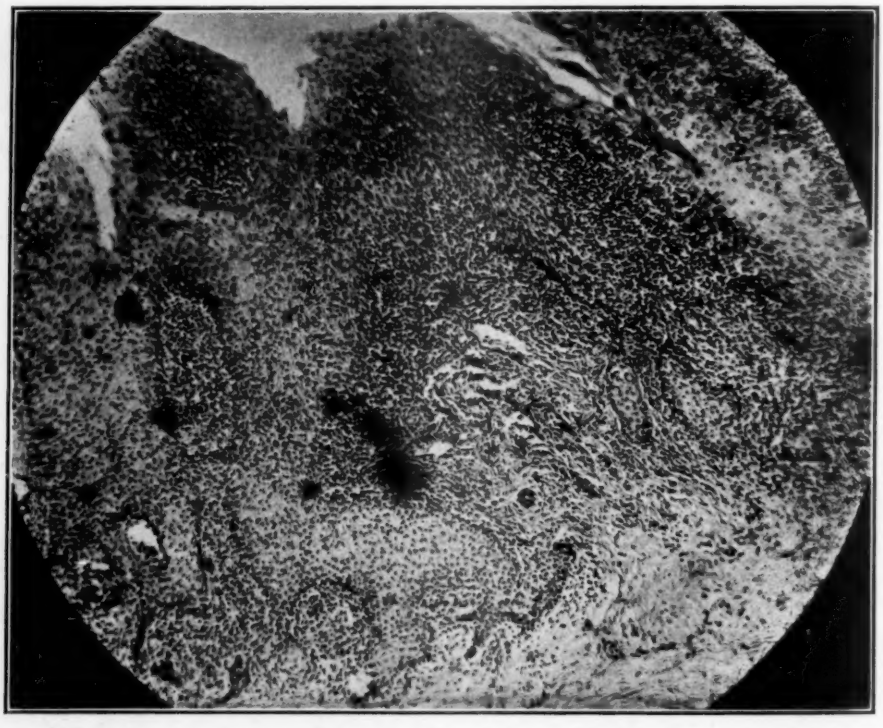

Fig. 6.—Case 4. Photomicrograph of biopsy of palatal lesion showing hyperplastic epithelial tissue with "deep islands" which may suggest something more than mere hyperplasia.

Pathologic Report.—Macroscopic description: Flat strip of tissue 1 cm. × 2 cm., dimpled, pedunculated, "granular" on presenting, rough on opposing excised surface was found.

Microscopic description: Section showed sheer segment of epithelium and underlying tissue. It confirmed pedunculation and dimpling of the marginal tissue (epithelium).

The epithelium was squamous and actually invaginated at intervals into papillary folds. It was everywhere hyperplastic. Basement membranes were preserved.

The underlying tissue was coarsely collagenous and was flecked with chronic inflammatory cells.

Fig. 7.—Case 4. Photomicrograph of excised lesion of palate showing hyperplastic changes in epithelial tissue (actual papillary folding).

Fig. 8.—Case 4. Photograph of impression of mouth two months after excision of palatal dimpled mucosa. Compare with Fig. 5.

Pathologic Diagnosis.—Hyperplastic changes in epithelial tissue (actual papillary folding) (Fig. 7).

Healing was uneventful, but during the process, granulations appeared which simulated the original growth. Two months later, the entire resected

area assumed the same velvety pink appearance as the rest of the normal mucous membrane, and no semblance of the resection was seen (Fig. 8).

Another type of irritation one observes is caused by partial dentures, injudicious use of clasps, and clasps without occlusal rests. The clinical picture may vary from that of the early stage of inflammation to the more advanced stage where the supporting bony structure becomes inflamed. The inflammation generally disappears upon removal of the irritant and insertion of a new and well-planned denture. If hyperplasia of the tissue occurs because of chronic irritation, it should be treated by cautery or excision, or both. The following case report is one of the many pathological conditions that may present itself.

Case 5.—M. S., a fairly developed, colored female, aged 28 years, negative Wassermann, positive gonorrhea, came to the dental clinic of the House of Detention with a complaint of pain in her gums.

History.—The patient had had her maxillary central and lateral incisors extracted about five years ago and a partial denture inserted. She had had progressive pain in her gums ever since.

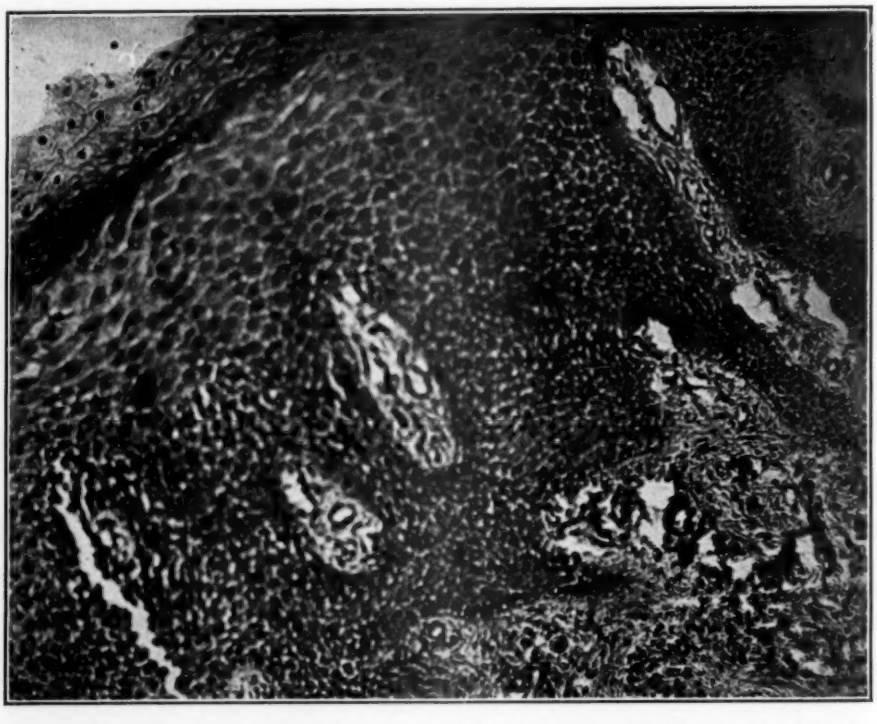

Fig. 9.—Case 5. Photomicrograph of chronic inflammation of palatogingival lesion.

Examination.—Examination of her mouth showed that she was wearing a partial vulcanite denture with scalloping fitting the necks of the teeth and the interdental spaces and with two clasps without occlusal rests about the canines. Removal of the denture showed the inner surface to be covered with debris. Examination of the tissues of the mouth showed the rugae to be normal, but the investing tissues of the teeth were highly inflamed about the canines. The mesiogingival tissues about the canines were rose colored, thick-

ened, and bled very easily when touched. The tissue did not hug the teeth; it was pushed up, away from the neck of the teeth. Debris was discernible under the attachments.

On the palatogingivae of the canines, smooth proliferative tonguelike masses, the size of split peas, were seen about each tooth. They were smooth and similar to the palatal mucosa in color and in nature. They were sessile and appeared to be a proliferation of the palatogingivae. They extended into the interproximal spaces of the canines and first premolars and rested against the crowns of the canine teeth for about two millimeters. It appeared as if the mucosa under the denture had been compressed, and these tonguelike proliferations were the result of the pressure.

Clinical Diagnosis.—Highly inflammatory tissues and proliferative gingivitis were seen.

Operation.—The operation for the removal of the proliferations was as follows. The palate was anesthetized with 2 per cent novocaine, and the proliferations were excised down to the bone using a scalpel. The tissue at the line of incision was subjected to cautery. The excised tissue was sent to the pathologist for examination.

Pathologic Report.—Macroscopic description: Small split pea sized piece of soft tissue.

Microscopic description: Sections showed markedly hyperplastic epithelium. The underlying connective tissue was heavily laden with inflammatory cells (lymphocytes and polymorphonuclears) together with edema.

Pathologic Diagnosis.—Chronic inflammation (Fig. 9).

The patient was urged to have a new denture made.

SUMMARY

I have herewith presented the clinical picture of the lesions and the manner in which they should be treated. Extreme care must be exercised in the planning of the denture to avoid any irritation, and the patient must be instructed to return to the dental office for periodic examination of the oral mucosa and a checkup of the denture.

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TIMES BUILDING

AN UNUSUAL CASE OF ABNORMAL HABIT

SIDNEY SORRIN,* D.D.S., NEW YORK, N. Y.

IN PREVIOUS articles[1-3] the writer called to the attention of the profession the fact that abnormal habits are definite factors in the etiology of dental and periodontal disease. The manifestation occurs particularly on the maxillary and mandibular anterior teeth.

An original classification of habits was devised as an aid to the practitioner in suggesting various practices to which patients might be addicted. These practices, both conscious and subconscious, were shown to be detrimental to oral health and were divided into three categories: neurotic, occupational, and miscellaneous habits.

In the majority of instances, the teeth most affected were located in the anterior part of the mouth. During the past three years, however, we have noted that many habits also affect the posterior teeth. The case discussed in this article is an excellent example of this point.

The dentist may find it helpful to bring to the attention of the patient the list of habits which have been classified. After a week has passed, the patient should be asked what practices he has found to be habitual in his case. Often when he is first made aware of a habit, he may deny its existence. However, when given a week for self-observation, he may recall practices which at the time of the original examination seemed nonexistent.

Fig. 1.—Anterior view of teeth in contact. Note recession on mandibular left incisor caused by habit.

CASE REPORT

This case is of unusual interest because of the manner in which periodontal disease has manifested itself. The patient, an Italian male, 45 years of age and

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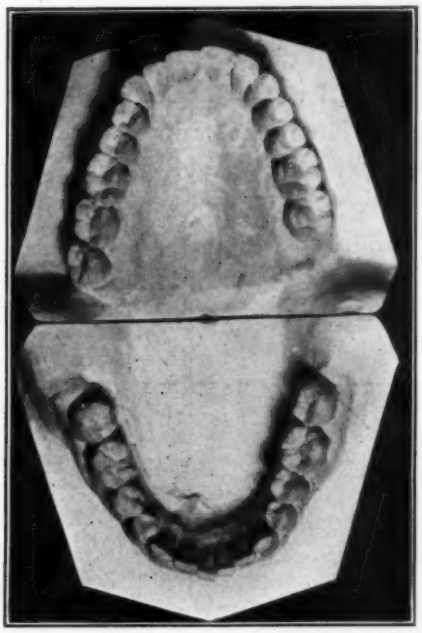

Fig. 2.—Casts showing the occlusal surfaces.

Fig. 3.—X-rays of the case. Note the periodontal involvement.

in good general health, presented himself for treatment at the New York University College of Dentistry (Fig. 1).

History.—Nothing unusual was presented in the general history except that the patient had always eaten hard foods in early life and very soft, well-seasoned foods later. Deep periodontal pockets were present, and marked mobility of the teeth was noted, particularly for all molar teeth. Abnormal wear with severe overloading and torque production was observed (Fig. 2). The mandibular left first molar presented marked pocket formation. Food impaction was present throughout the mouth.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 4.—The position of the toothpick between the teeth.
Fig. 5.—The lower lip on the left side showing lesions caused by toothpick.
Fig. 6.—Toothpick in position.

Radiographic Examination.—Severe alveolar resorption was noted involving the bifurcation of all the posterior teeth (Fig. 3). The maxillary lateral incisors showed root resorption. Around the mandibular left first molar there was evidence of marked, advanced bone resorption.

Vitality Test.—

Right		10	10	11	8	7	6	8	6	6	6	8	8	11	11	Pulp response
	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	Left
		7	6	5	4	3	2	1	1	2	3	4	5	6	7	
		11	11	11½	8	12	8	9	8½	8	7	7½	9	14	14	Pulp response

Discussion.—The points of interest in this discussion concern the mandibular left first molar. In testing the occlusion I noted no more occlusal trauma than was observed on the remaining teeth. The patient suggested that he used the left side more than the right, but occlusal wear remained the same all over. All the molar teeth presented the same marked mobility (they were noted for extraction) with slightly more mobility on the mandibular left first molar. On further questioning of the patient, it was discovered that he cracked nuts with his teeth. This, however, would not account for the severity of trauma on the particular molar tooth.

I observed toothpicks in the patient's vest pocket and asked him how he employed them. He revealed that he kept a toothpick between the maxillary and mandibular left molar teeth in the manner shown in Fig. 4. In addition he was biting on the toothpick occasionally with the lateral incisors. Note that the toothpick is placed directly between the mesiobuccal cusp of the maxillary left first molar and the mandibular left second premolar and first molar teeth. The direction of force was particularly toward the mandibular molar.

Interesting, too, was the fact that the lower lip on the left side was irritated by the toothpick, and the lip on the right side was free from irritation (Fig. 5). Note the position while the toothpick is held by both the lip and the teeth as shown in Fig. 6.

SUMMARY

Habit is a definite factor in periodontal disease, and the profession might well, at all times, determine whether this factor is predominant in a particular case. Our clinical research for the past ten years in this special phase of the disease has proved to us that abnormal habit should never be ignored in the taking of the history of any case of periodontal disease. This present case report, we trust, will lead to closer observation of habits in the etiology of parodontal disease.

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745 Fifth Avenue

SURGICAL RESECTION OF MUSCLE ATTACHMENTS OF AN EDENTULOUS MANDIBLE

S. Francis Grosso, D.D.S., Newark, N. J.

PROMINENT abnormal muscle attachments, usually in the maxillary and the mandibular premolar region, present a difficult problem for the prosthodontist and the oral surgeon in preparing the mouth for suitable retention of partial dentures, or for restorations of full maxillary or mandibular dentures. Abnormal attachments of tissues may be due to cicatrix formation from injury, infected wounds, or operative procedures.

Fig. 1.

Fig. 2.

Fig. 1.—Model showing abnormal muscle attachment in left premolar region of mandible before operation.

Fig. 2.—Model showing normal muscle attachment two months after operation.

The treatment of these cases depends on the judgment of the oral surgeon as to the technique to accommodate the individual case. The principal consideration, of course, is to make the incision through the tissues at the base of the attachments to the side of the alveolar process and to prevent reattachment of the tissues.

Case 1.—M. G., a male, aged 44 years, was presented Aug. 25, 1938.

Chief Complaint.—Patient complained of discomfort on wearing of full mandibular denture, due to displacement of denture by muscle attachments.

History.—Patient had full maxillary and full mandibular dentures constructed and inserted in June, 1938. The area on the mandibular denture in the premolar region was relieved, until the entire buccal flange was obliterated to the crest of the ridge. The patient was referred by his dentist for surgical treatment.

Diagnosis.—Abnormal muscle attachment in left premolar region of the mandible.

Treatment.—Surgical resection was performed and the patient was under treatment from Aug. 30, to Oct. 7, 1938.

Operation and Result.—The operation consisted of the incision, the separation of the flap from the periosteum, suturing, medication, and dressing. Under novocain conduction anesthesia, a curved incision was made extending from the mesiobuccal aspect of the mandibular left first molar region approximately one inch to the distobuccal aspect of the mandibular left canine region, with the convexity facing the alveolar ridge, through the mucous and submucous tissue down to, but not including, the periosteum. The separation of the flap from the periosteum was performed with the periosteal elevator, the sharp point of which was protected with gauze. This separation was continued to approximately the normal level of the lower limit of the fold. Suturing, using 00 catgut, was done by passing the needle into the free edge of the flap, entering it at its mucous surface, and leaving it at the raw surface. Sufficient suture material was pulled through the flap to permit the needle easily to engage the soft tissue at the deepest part of the wound. The suture was then tied, pulling the edge of the flap deep into the wound, leaving mucous membrane opposite the exposed periosteum, thus preventing reunion. The exposed periosteum was covered with iodoform gauze impregnated with zinc oxide and eugenol made into a paste. This was removed after forty-eight hours, and the wound was irrigated daily with warm aromatic chlorazene solution and dressed with iodoform gauze until complete recovery.

At the present time, without any untoward symptoms, the patient is wearing a full mandibular denture most comfortably.

685 Mt. Prospect Avenue

Case Reports

Please send all contributions of interesting case reports to Dr. Kurt H. Thoma, 53 Bay State Road, Boston, Mass.

CASE REPORT NO. 26

GANGRENOUS STOMATITIS

MILTON B. ASBELL, D.D.S., BALTIMORE, MD.

Patient.—M. M., colored female, 45 years of age.

Chief Complaint.—Patient entered the Baltimore City Hospital on Aug. 15, 1938, at 9:00 P.M. complaining of "sore mouth and bad odor to breath" of two weeks' duration.

Family history was noncontributory.

Past History.—She had questionable rheumatic fever at the age of 18 years. During 1921 a pelvic laparotomy was done, and the patient had not menstruated since this operation. During the same year she was found to have "bad blood" and was given "needle treatments" for about a year. A review of the systems revealed that the patient had had occasional frontal headaches and vertigo on exercise. She has had bad teeth for years and recently has had sore gums. The cardiovascular system showed she had heart trouble for about eight years, the symptoms being dyspnea, ankle edema, and ascites. The patient's heart from time to time for the past two years had been decompensated and she was advised by her private physician to discontinue work but had continued working up to the past ten months. Genitourinary history revealed nocturia 1 to 4 times; also frequency. The patient had lost about thirty pounds in the last eight years.

Present Illness.—About ten months ago she had an acute cardiac episode of decompensation with anasarca and cardiac delirium. Her most severe period of decompensation occurred in July, 1937. She had been treated with digitalis and rest in bed. It was about this time that an ulcer appeared on her leg.

About three months ago the patient experienced another episode of acute decompensation. It was just prior to this that she was examined and was found to have marked oral sepsis and parodontosis. The patient stated the onset of the oral condition occurred about the same period of time with a small area at the base of a loose tooth in the mandible and progressed rather rapidly until the time of examination.

Physical Examination.—The patient showed evidence of marked weight loss. Her temperature was 104° F., pulse, 128, respiration, 28, and blood pressure, 94/40. She was dyspneic and in marked respiratory distress. The lower lip was gangrenous, and she could scarcely talk. Saliva drooled constantly from her mouth. The face, eyelids, and lips were swollen. The nasal mucosa was congested, and the turbinates were hypertrophied.

The mouth showed marked necrosis and sloughing of the mucous membranes of the lower lip and anterior part of the mandible, especially on the left side where the necrosis had laid bare the bone. The necrotic process was also seen to affect the roof of the mouth and appeared to involve the whole buccal cavity. The breath of necessity was quite fetid and foul. The pharynx was difficult to visualize, but no gross pathology was noted. The entire cervical lymph node chain was enlarged and tender.

Examination of the chest and lungs revealed the breath sounds were distant with occasional coarse râles heard in both bases and squeaky bronchi at both hili. Examination of the heart revealed this organ to be enlarged to the left on percussion. The point of maximum intensity was in the sixth interspace, just inside the midclavicular line. The heart sounds were fairly good in quality with an occasional extrasystole noted. There was a rather rough presystolic murmur at the apex which was nontransmissible. The peripheral vessels showed evidence of marked arteriosclerotic changes. Examination of the abdomen revealed it to be soft and flabby. There was a low midline scar. The liver was palpable three fingerbreadths below the right costal margin. A few small lymph glands were palpable in both inguinal regions. Examination of the extremities showed a diffuse brawny edema of both ankles with hyperpigmentation of the skin. There was a large ulcer on the posterior aspect of the right leg. Rectal examination was negative. Pelvic examination showed thickened labia majora, vaginal mucosa somewhat atrophic, and uterus and adnexa not palpable.

Laboratory Examinations.—

URINE

DATE	CHARACTER	SP. GR.	REACTION	ALBUMIN	SUGAR	MICROSCOPIC
8/12/38	Cloudy Orange	1.016	Alkaline	2 plus	Negative	W.B.C., 6-12; R.B.C., rare; casts, frequent granular; urates, amorphous 3 plus
8/20/38	Clear Brown	1.018	Alkaline	1 plus	Negative	W.B.C., 1-3; R.B.C., 0-2; casts, rare granular; bile, trace
8/26/38	Clear Brown	(qns)	Acid	1 plus	Negative	W.B.C., 1-3; R.B.C., 0; casts (catheter), rare granular; bile, none

BLOOD TYPE II

DATE	R.B.C.	W.B.C.	HEMOGLOBIN (%)	DIFFERENTIAL COUNT (100 CELLS)			B. PRONTYLIN (MG. %)	N.P.N. MG. PER 100 C.C.	MG. SUGAR PER 100 C.C.	CO_2	EAGLE
				P.M.N.	LYMPHOCYTES	MONOCYTES					
8/16/38		32,000	65					48			Nega.
8/17/38	3,000,000	72,000	58	95	4	1	4.3	39	80	60	
8/18/38	3,070,000	47,200	66								Nega.
8/19/38	3,660,000	50,850	72				7.3				
8/20/38	3,760,000	33,050	86								
8/25/38	3,680,000	23,500	82	91	7	2					
8/26/38								50			

Smears From Mouth.—Aug. 16, 1938, Dark-field examination, very few spirochetes. Aug. 17, 1938, Dark-field examination, rare spirochetes and necrotic cellular debris.

Electrocardiographic report on Aug. 17, 1938, stated that it appeared that we were dealing with either coarse fibrillation or a mixture of flutter and fibrillation. If the patient was not digitalized, the record showed evidence of myocardial disease.

*Course and Treatment.**—On admission the patient was put on compresses and mouth irrigations. Following this (third day of hospitalization) zinc peroxide was administered to the mouth and leg and continued daily. Next day following admission because of her critical condition, the patient was given an initial dose of 80 grains of sulfanilamide by nasal tube with 40 grains of bicarbonate of soda. This raised the blood level of sulfanilamide to 4.3 mg. per 100 c.c. in six hours. Following this, 20 grains of sulfanilamide were admin-

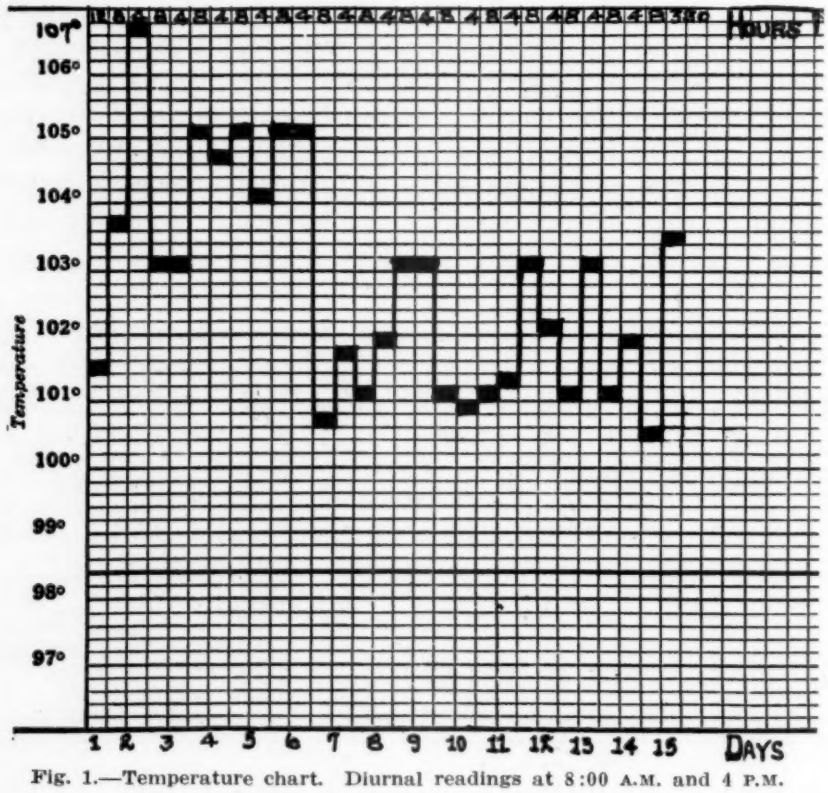

Fig. 1.—Temperature chart. Diurnal readings at 8:00 A.M. and 4 P.M.

istered with an equal amount of bicarbonate of soda in the same manner every four hours for three days, followed by 10 grains three times a day. On the second day of treatment, the patient received 0.03 gm. of neoarsphenamine by intravenous route, also a transfusion of 350 c.c. of citrated blood. On the third day 300 c.c. of blood were given and 275 c.c. on the fifth. Sulfanilamide was discontinued after the eighth day, its maximum concentration in the blood reaching 7.3 mg. per cent on the fourth day of treatment.

*The therapy has been drawn freely from a report by Dr. Harold R. Bohlman which appeared in the December, 1938, issue of *The American Journal of Surgery*, entitled "Sulfanilamide in Surgical Practice," page 828.

The red cell count never dropped below 3,000,000 which occurred on the second day of treatment, when leucocytes reached 72,000, undoubtedly the result of sulfanilamide action. It was astounding to see the patient's greatly swollen face recede and toxic symptoms subside almost immediately. The extension of the gangrene stopped at once so that the line of gangrene was well outlined and a débridement could be done, removing the buccal mucosa anteriorly under the tongue, portion of the hard and soft palate, and anterior portion of the mandible. The patient appeared to be doing very well when separating slough caused a carotid branch to rupture, and she died suddenly on the fifteenth day.

Fig. 2.—This picture shows the condition on the fifth day after admission. Notice the beginning of the line of demarcation, particularly of the lower lip. The ulceration on the lower lip is as it appeared clinically and is not a high light.

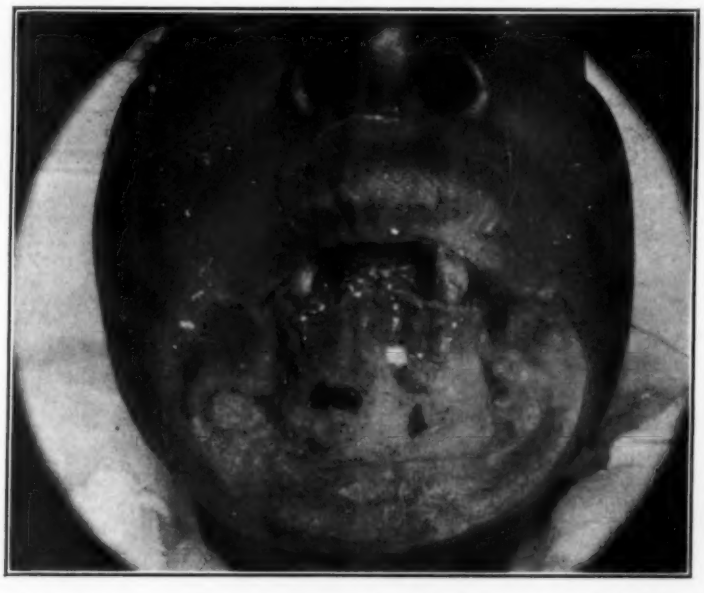

Fig. 3.—This picture was taken on the day before death. Notice the lower incisors have been exfoliated. The small white area immediately below the alveolar margin is not a high light. Note the extent of the débridement.

Diagnosis.—Gangrenous stomatitis, hemorrhage from mouth, arteriosclerosis, general rheumatic heart disease, inactive enlargement of heart, cardiac insufficiency, ascites, chronic auricular fibrillation, and hydrothorax, right, due to passive congestion.

Autopsy Report.—The lower end of the trachea and the bronchi showed a bluish-purple discoloration of the mucosa which may have been due to the zinc peroxide which the patient had been receiving prior to death. There was no evidence of ulcerations. The esophagus was not remarkable, and the epiglottis showed no edema. The right pillar, the tonsillar fossa, and the under surface of the tongue were covered with a bluish, necrotic layer of tissue. No definite area of erosion into any muscle could be made out that may have been responsible for the hemorrhage prior to death.

There was a very foul, sloughing, necrotic ulcer involving the buccal mucosa, the lips, the wall of the mouth and tongue, and the right tonsillar fossa. The lower lip and adjoining area had been excised leaving a gap 4 by 7 cm. In this region, the mandible was exposed but did not appear to be involved. Only two teeth were present. The mouth was filled with a few large, dark-red, jellylike clots. No source of hemorrhage could be distinguished. Lymph glands of the neck appeared enlarged, as did those along the course of the trachea (courtesy of Dr. Stephen Thomas).

Department of Orthodontic Abstracts and Reviews

Edited by

Dr. J. A. Salzmann, New York City

All communications concerning further information about abstracted material and the acceptance of articles or books for consideration in this department should be addressed to Dr. J. A. Salzmann, 654 Madison Avenue, New York City.

Hyperthyroidism and Early Eruption of Teeth. By H. Middleburgh, *The British Dental Journal* **66**: 294-295 (March 1), 1939.

Hyperthyroidism is rare in children, but the following case report shows that it can occur and that when it does, the eruption of the teeth is materially accelerated.

Gwendoline H., aged 4 years 11 months, prematurely born at seven months and weighing three and three-fourths pounds, was fed after three months with patent foods, gaining weight normally. Although never ill she slept poorly and was always nervous. Some nine months before her admission into the hospital typical symptoms of hyperthyroidism manifested themselves, including a pulse of 140 and recurrent attacks of dyspnea and tachycardia lasting several hours. At the age mentioned the maxillary right first permanent molar had erupted and the maxillary left first permanent molar showed through the gum. The right and left mandibular permanent central incisors were erupted, all some two years ahead of their normal time. Several of the deciduous teeth were carious, and since a pronounced immunity to dental decay is a feature of most cases of hyperthyroidism, the presence of caries confirms that the hyperactivity of the gland commenced comparatively recently. The patient made a splendid recovery after thyroidectomy.

Lantern Slides From Typewritten Material. *Science,* April 21, 1939.

A method of making lantern slides of tabular and text matter, which eliminates one step in the photographic process, is to type the data through white carbon paper on black paper. The ribbon indicator on the typewriter is set at position for stencil cutting, to obtain as white an imprint as possible from the carbon paper. The material transferred as white on black paper is then photographed in ordinary daylight (artificial light does not give good results), Eastman contrast lantern slide plates being used as negatives. Each negative is bound with a cover glass as an ordinary lantern slide. This method results in slides that show black letters and figures on a white background and avoids the necessity of making positives after the negatives are made.

Kymograph records on smoked paper can be mounted on black paper, the legends typed through the white carbon paper, and both the records and the legends will be reproduced photographically as black on white. Simple curves and diagrams can be traced through the white carbon paper onto the black paper. We have been unable to find a white typewriter ribbon on the

market. For black paper we have found the "Black Antique Atlantic Cover" (20×26–65) of the Cook-Vivian Company satisfactory and for white carbon paper the "Panama White Carbon" of the Manifold Supplies Company, both of Boston.

Thorne M. Carpenter

Improved Method of Lip Fixation. United States Naval Med. Bulletin, Washington, D. C. **36**: 455 (October), 1938.

Ebert and Boyden treated a relatively large number of cases of congenital deformities of the lip by the following technique: Fixation is accomplished by impaling the lip on an ordinary wooden tongue depressor with heavy common bankers' pins. Closure lines are marked out, and the incision is made along these lines. The authors prefer to employ a new sterile razor blade held in a curved hemostat. Approximation of the segments of the lip is rendered more facile and exact by manipulation of the free ends of the tongue depressors. The edges are brought into place and held there by an assistant while the operator places the sutures. The cosmetic and functional results in the cases in which operation was performed were exceptionally satisfactory.

A Simple Way to Produce Accurate Intraoral Roentgenograms and a Modification of the Technic of Dental Radiography. By Theodore Kaletsky, D.D.S., J.A.D.A., March, 1939.

Dr. Kaletsky departs from the long accepted theory that the central x-ray beam must be directed at right angles to the plane that bisects the angle formed by the long axis of the tooth and the film. He has devised an instrument which is a combined film holder and angulator. The basis for the new technique is the wide variations observed in the angle formed by the crown and root which he calls the *crown-root angle.* He also notes that almost all of the maxillary teeth and the mandibular six anterior teeth tilt outward and therefore are not at right angles to the occlusal plane. Kaletsky has perfected the angulator to a point where the average practitioner can now take consistently accurate x-ray pictures. The device is corrected for deviations, and the difficulty of proper positioning of the central beam is easily overcome.

Kaletsky lists the following features which the angulator offers:

1. The patient may close the lips and inhale deeply during the procedure which greatly eliminates the tendency to gag.

2. The necessity of placing the finger in the mouth has been obviated, eliciting a satisfactory patient response, for sanitary reasons.

3. In cases of arthritis and nervous conditions where patients are unable to support the films the difficulty is overcome by the use of the angulator.

Allan N. Arvins

Changes in Headforms. *Science,* Vol. 89, No. 2313, P. 10.

Dr. Charles B. Davenport of Cold Spring Harbor, N. Y., speaking before the American Philosophical Society, called attention to the fact that we change the shapes of our own skulls, giving our heads different forms as we grow

up, according to the predominating activities of the various "ages of man" through which we pass. Dr. Davenport has spent many years in the application of the principles of genetic science to problems in human eugenics. The process begins even before birth, when the skull becomes longer and narrower just before it must make its crucial journey through the birth canal. In early infancy, while it is still only a series of slightly bony plates embedded in flexible cartilage, it shapes itself more broadly as it lies in the crib. Yet children born invalids and condemned to lie in bed all their lives do not keep this crib-influenced skull shape, but eventually acquire nearly standard head proportions. "As soon as the infant begins to walk," Dr. Davenport continued, "the head height diminishes or increases only slowly under the pull of gravity, but after one and one-half years the vertical dimension increases rapidly, as though to compensate for the earlier loss. During the period of great activity in jumping and romping the vertical dimension of the head grows very slowly. The length of the skull grows relatively faster in adolescent boys than in girls."

Book Reviews

Dental Surgery and Pathology. By J. F. Colyer, K.B.E., LL.D., F.R.C.S., L.D.S., Consulting Dental Surgeon to Charing Cross Hospital, and Evelyn Sprawson, M.C., D.Sc., M.R.C.S., L.R.C.P., L.D.S., Dental Surgeon and Lecturer on Dental Surgery and Pathology to the London Hospital. Seventh Edition, p. 1067. New York and London, 1938, Longman's, Green and Co.

This outstanding volume now in its seventh edition is more than a textbook for students or a reference work for practitioners. It presents dental pathology in all of its ramifications and subdivisions. There is here a close correlation between the basic medical sciences and their application to the practice of dental surgery. But the book really goes farther than is implied in its title because every phase of dental practice, with the exception of prosthetics and the filling of teeth, is discussed. It is true, the dental scientist will not find here the latest conclusions of workers in the various related fields of dentistry. However, the dental practitioner will find an intensely practical volume, replete with information which he can either apply directly or which will be of help to him in establishing his diagnosis and in outlining treatment. While there is a paucity of references to works of American dental authors, the book will serve to acquaint American dentists with the accepted methods of their British confreres. A complete index is provided.

Immunity: Principles and Application in Medicine and Public Health. An Exposition of the Biological Phenomena of Infection and Recovery of the Animal Body from Infectious Disease, with Consideration of the Application of the Principles of Immunity to Diagnosis, Treatment, and Prophylaxis and Their Usefulness in the Control of Epidemics. By Hans Zinsser, M.D., Professor of Bacteriology and Immunology, Harvard Medical School; John F. Enders, Ph.D., Assistant Professor of Bacteriology and Immunology, Harvard Medical School, and LeRoy D. Fothergill,

M.D., Assistant Professor of Bacteriology and Immunology and Associate in Pediatrics, Harvard Medical School. Ed. 5. P. 801. New York, 1939. The Macmillan Co.

This book, which was first published in 1914 as a text for bacteriologists and laboratory workers, has since become a necessary adjunct to the physician and clinician in public health. These workers in the health professions would today be considered ill prepared for their jobs if they were not conversant with the subject matter here presented. The first section of the book deals with the theoretical and experimental aspects of resistance to disease. Part Two presents a detailed discussion of the pathogenesis of the principal infectious diseases, the methods of preventing them, and the application of specific principles to their treatment. Research workers and clinicians in dentistry who lay claim to familiarity with modern scientific method as well as progressive dentists would do well to add this book to their libraries. The book has a splendid index.

J. A. S.

Editorials

A New Dress for Dental Journalism

A RESOLUTION pertaining to dental journalism, which was presented before the House of Delegates, has been turned over to the Reference Committee on Miscellaneous Business of the American Dental Association.

The resolution was called to the attention of the profession in an editorial which appeared in *Northwest Dentistry* for April, 1939. In short, the resolution proposes that the American Dental Association express its approval of the creation of a coordinating committee on dental journalism to be composed of not more than two members designated from each of the following: the American Dental Association, the American College of Dentists, and the American Association of Dental Editors. "The duty of the Committee shall be to study the needs and resources in the field of dental science and practice, in this manner creating a coordinated picture of dental journalism, which will permit interested committees of all dental organizations more intelligently to form judgment and take action."

The above proposal is interesting because it suggests the appointment of a committee within the American Dental Association; notwithstanding, it stipulates that two-thirds of the committee be members of certain other designated associated organized groups whose activities on the subject of dental journalism have been widely publicized and whose regimented propaganda directed against independent dental journals is a familiar topic to all who are readers of dental journals.

There is ample justification, no doubt, in any plan that would place the A.D.A officially in charge of any and all surveys pertaining to the subject of journalism. There have been so many surveys conducted, however, in the past, on this subject by various unofficial outside groups, that an official survey by a nonpartisan organization such as the A.D.A., would make a more wholesome impression on many editors and publishers alike as to the sincerity of purpose in hand and as to the fairness and justice with which such a survey would be conducted.

The point, however, is that the action proposes to pack the committee, which should enjoy the hoped for confidence, with two-thirds of its members from two organizations who have previously conducted surveys and have made their own recommendations on the subject of dental journalism. That is like stacking the deck, and not unlike the old interlocking directorate policy of corporations of the past, which made it possible for the directors to sit on the board of one corporation while it gave most of its business to another corporation, of which they were also members of the Board of Directors. Of course, that fixed both the buying price and the selling price.

In all controversial questions, democratic rule should still prevail, and the will of the majority is still thought to be the key to democracy. There-

fore, would it not be judicious, in order to avoid the interlocking directorate hookup, to amend the proposal and appoint members from other associated groups besides the American College of Dentists of the American Association of Dental Editors?

In fact, the more we think of it, why not make it unanimous and appoint two members on the Committee from each and every one of the numerous associated groups which are organized and attach themselves to the periphery of the great American Dental Association? Then there would be a fair cross section of a representative, democratic, and cosmopolitan group.

Whoever wrote the coordinating journal committee resolution for the A.D.A. must have had his tongue in his cheek when the proposal was made, because its intention to pack the committee is clear. It might almost be one of Charlie McCarthy's and Bergen's creations on the Sunday night hour, accompanied by the characteristic Charlie McCarthy chuckle.

There can be little doubt that the A.D.A. as the proper authority should come in and take over the journal fiasco, particularly as the proper place for any journal survey is within the A.D.A. in the first place, rather than the promotion of organized outside groups and reformers.

Reformers usually develop a fervor of momentum that carries them too far. They lose perspective; their enthusiasm overrides the dictates of common sense. The proposal of a coordinating committee of dental journalism of the American Dental Association, carrying with it control by two associated groups, is a classic example of an attempt to "control from other island" groups and should be promptly and summarily quashed. The Committee should be appointed from the membership of the A.D.A. as a whole and not from specified groups within the A.D.A. A committee that would honestly represent the A.D.A. on the subject of dental journalism should be conceived and born of parentage unprejudiced toward previous conditions of servitude, in order to retain the confidence and respect of those whom it would serve. It should be an A.D.A. committee in fact as well as in name.

H. C. P.

A.M.A. and A.D.A. vs. Wagner Health Bill

AT ITS recent meeting (May, 1939), the American Medical Association has officially opposed the Wagner Health Bill on the primary basis, at least, that it is not in the best interests of the people. The bill, commonly called the National Health Act of 1939, is an amendment to the Social Security Act of 1935 and is intended to make effective a national health program recommended by the interdepartmental committee to coordinate health and welfare activities. In explanation of the American Medical Association's attitude, a report adopted by the House of Delegates of that organization stated, "The Wagner health bill does not safeguard in any way the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment."

The A.M.A.'s decision is also based on the supposition that the Wagner health bill "promotes the development of a complete system of tax-supported

governmental medical care, and that while the bill provides compensation for loss of wages during illness, it also proposes to provide complete medical service in addition to such compensation."

The main thing, however, that the physicians do not like is that the bill provides that Federal control and Federal agents are given full authority to disapprove plans proposed by individual states and, of course, that waves the flag of regimentation.

On the other hand, the American Medical Association urged the development of a mechanism for meeting the needs for expansion of preventive medical services, extension of medical care for the indigent, with local determination of needs and local control of administration, within the spirit of the American philosophy of government and without injury to the quality of medical service.

The previous week in New York City the Dental Society of the State of New York, discussed the Wagner bill and its effect on dental practice, and gave an opposite reaction. Dr. Arthur H. Merritt, president-elect of the A.D.A., it is reported, came out for the Wagner Bill Health Insurance supported by a pay roll tax, which is placed on all three, employee, employer, and the government. It is further reported that the reaction to Dr. Merritt's suggestion was favorable, while the opposition to the Wagner Bill was not received enthusiastically.

That situation appears to be both new and news. The dental profession on one side of the fence and the medical profession on the other (both professions in health service) on what is probably the most important single issue that has ever confronted either profession in its entire history. One thing is certain, the two professions are not together on their most important problem of all time

H. C. P.

News and Notes

1939 Golf Tournament

American Association of Orthodontists

Four men sat playing bridge at the home of a man in Kansas City, Mo., in 1913. Conversation replaced the bridge, and who won the rubber or who had the highest score now is forgot. However, from that bridge game sprang the idea of the Mission Hills Country Club in Kansas City, with its splendid golf course.

The first clubhouse was a rectangular tent, a short distance northwest of the site of the clubhouse today. The early-day members presented a strange sight as they emerged from that first clubhouse. They were dressed in the height of golf fashion of the day with loud checked knickers, bright colored socks and sweaters, and little white caps.

Those original members were filled with no more energy or seriousness of purpose than were the fifty-three members of the American Association of Orthodontists who were permitted to play on this fine course, April 17, 1939, the first day of the 1939 annual meeting.

Members playing the morning round had typical April weather; however, a snow storm greeted the players in the afternoon. Only the visitors of fortitude and perseverance managed to finish the course, while the wet snow battled them for a knockout.

The Mission Hills golf course is one of the finer courses in this country. The orthodontists who played on it will be interested to learn of its equipment. The fairways are among the few in the West with a sprinkler system, and the greens are the best obtainable.

According to the report received from Homer M. Shelden, chairman of the golf committee, the following members qualified. In order that no one should be disappointed, the committee was liberal almost to a fault with the prizes; even the golfer who made the best deal on the first tee was not overlooked.

Low Score: 1. Harry Metz, Pittsburgh, Pa.
2. Hays N. Nance, Los Angeles, Calif.
3. E. F. Woodring, Tulsa, Okla.
4. A. S. Bumgardner, Charlotte, N. C.

Low Putts: 1. F. R. Aldrich, Columbus, Ohio.
2. H. C. Pollock, St. Louis, Mo.
3. A. C. Gifford, Oshkosh, Wis.
4. F. E. Shelden, Kansas City, Mo.

Blind Bogy: 1. E. G. Jones, Columbus, Ohio, and W. S. Gray, Nashville, Tenn., tied for first place. Gray won the toss.
3. T. O. Gorman, San Antonio, Texas
4. Max Ernst, St. Paul, Minn.

The golf committee consisted of Homer M. Shelden, chairman; John V. Brown, Donald F. Mosher, and Frank E. Shelden. The American Association of Orthodontists thanks the committee for the fine entertainment which the visiting members enjoyed. For the golf-minded orthodontists the day was a success from the first tee to the last hole.

H. C. P.

Congress of the International A. R. P. A.

The eighth annual congress of the International A. R. P. A. and the yearly meeting of the German Association for the Research of Paradentosis will be held at Freiburg/Breisgau from Aug. 1 to 5, 1939. All inquiries should be directed to the office of the A. R. P. A. Congress, 11 Rottecksplatz, Freiburg/Breisgau, Germany.

Great Lakes Association of Orthodontists

The thirteenth annual meeting of the Great Lakes Association of Orthodontists will be held at the Dearborn Inn, Dearborn, Mich., on Nov. 6 and 7, 1939.

Southern Society of Orthodontists

The seventeenth annual meeting of the Southern Society of Orthodontists was held in Savannah, Ga., on March 6 and 7, 1939. The following speakers appeared on the program: Sam G. Cole, Atlanta, Ga., E. B. Arnold, Houston, Texas, M. S. Aisenberg, Baltimore, Md., E. C. Lunsford, Miami, Fla., Antonio J. Waring, M.D., Savannah, Ga., and C. C. Howard, Atlanta, Ga. Clinics were presented by Robert E. Allen, Jacksonville, Fla., E. B. Arnold, Houston, Texas, A. C. Broussard, New Orleans, La., Winston P. Caine, Chattanooga, Tenn., J. A. Gorman, New Orleans, La., Andrew F. Jackson, Philadelphia, Pa., George M. Anderson, Baltimore, Md., and Philip A. Leavitt, Boston, Mass. F. R. Aldrich, Columbus, Ohio, and Andrew F. Jackson, Philadelphia, Pa., presented case reports.

Eastern Association of the Angle School of Orthodontia

The thirtieth annual meeting of the Eastern Association of Graduates of the Angle School of Orthodontia was held on May 8 and 9, 1939, in New York City. At the close of the meeting the organization was dissolved.

British Society for the Study of Orthodontics

The British Society for the Study of Orthodontics met at Manson House, 26 Portland Place, W. I., on Feb. 6, 1939. S. A. Riddett gave the presidential address, and W. A. Sowden Hills presented a paper.

At the March meeting of the society a special lecture demonstration was given by Dr. De Coster.

A third meeting of the society was held May 1, 1939, with the following speakers on the program: Mr. H. Chapman, Miss L. M. Clinch, Mr. G. Ellingham, Mr. O. Henry, Mr. Cale-Matthews, and Mr. O. N. Catchpole.

European Orthodontic Society

The annual meeting of the European Orthodontic Society will be held at Bonn-Wiesbaden, Germany, on July 3-6, 1939. The officers of the society are: President, Harold Chapman, London; vice-president-elect, Gustav Korkhaus, Bonn; vice-president-elect, A. E. Rowlett, Leicester; secretary, G. F. Cale-Mathews, Birmingham; and treasurer, O. Henry, London. The provisional program of the meeting appeared in the April issue of the JOURNAL.

Denver Summer Seminar

The fourth annual Denver Summer Seminar will be held at Denver, Colo., July 2 to 9, 1939.

WILLIAM R. HUMPHREY
1232 Republic Building
Denver, Colo.

American Dental Assistants Association

The fifteenth annual session of the American Dental Assistants Association will be held at Milwaukee, Wis., July 17 to 21, 1939, with headquarters at the Astor Hotel. For further information address

LUCILE S. HODGE, General Secretary
401 Medical Arts Building
Knoxville, Tenn.

OFFICERS OF ORTHODONTIC SOCIETIES*

American Association of Orthodontists

President, William R. Murray - - - - - - - - - - - - - - - - - - Chicago, Ill.
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President, Harry E. Kelsey - - - - - - - - - - - - - - - - - - - Baltimore, Md.
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Frederic T. Murlless, Jr. - - - - - - - - - - - - - - - - - - - Hartford, Conn.
Oliver W. White - Detroit, Mich.
James D. McCoy - Los Angeles, Calif.

Foreign Societies†

British Society for the Study of Orthodontics

President, S. A. Riddett
Secretary, R. Cutler
Treasurer, H. R. Evans

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*The Journal will make changes or additions to the above list when notified by the secretary-treasurer of the various societies. In the event societies desire more complete publication of the names of officers, this will be done upon receipt of the names from the secretary-treasurer.

†The Journal will publish the names of the president and secretary-treasurer of foreign orthodontic societies if the information is sent direct to the editor, 8022 Forsythe, St. Louis, Mo., U. S. A.